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LIFE FACTORS AFFECTING U.S. ARMY JUNIOR-ENLISTED SOLDIERS IN
REACHING THEIR EDUCATIONAL GOALS

A Dissertation
Presented to
The Faculty of the Department of Educational Administration, Leadership, and Research
Western Kentucky University
Bowling Green, Kentucky

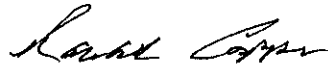
In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

By
Irina Rader

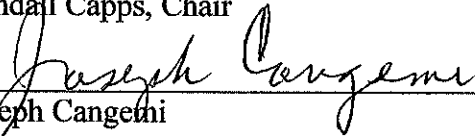
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LIFE FACTORS AFFECTING U.S. ARMY JUNIOR-ENLISTED SOLDIERS IN
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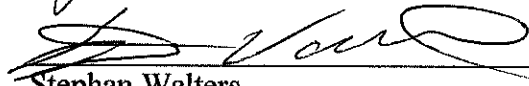
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PREFACE

The purpose of this study is to gain insight into the United States (U.S.) Army's Voluntary Education (VolEd) Tuition Assistance (TA) Program's dynamics in the context of usage, to expand the understanding of patterns in an adult's participation in learning, and to identify barriers within the U.S. Army junior-enlisted soldier population serving on active duty in Regular Army (RA) in the rank of specialist (E-4). U.S. Army specialists represent the largest sector of the U.S. Army soldier population, yet have the lowest participation in the VolEd Program, specifically TA. Hence, U.S. Army soldiers in the rank of specialist may have been labeled as underserved. The Integrated Army Personnel Database (ITAPDB, 2019) revealed that 110,188 men and women were serving in the rank of specialist in the RA in 2019. The highest levels of education held by the RA specialists as of September 30, 2019, included 4,676 associate's degrees, 10,263 bachelor's degrees, 829 master's degrees, and 55 doctoral degrees. Further, 85.65% of soldiers in the rank of specialist did not have an academic degree beyond a high school diploma (ITAPDB, 2019).

In addition, 88.57% of all RA specialists had a basic GoArmyEd account, the automated online portal for education needs, which enables soldiers to request TA. In terms of age, U.S. Army RA specialists were represented by 18 to 50-year-old soldiers, with a significant number between 22 and 25 years, a range that has historically represented the distinct college age in the U.S. postsecondary education system (American Council on Education [ACE], 2019; Cross, 1981; Hussar & Bailey, 2016).

This study identifies and reviews various factors encountered by the U.S. Army RA junior-enlisted soldiers in the rank of specialist to determine to what extent these factors played in meeting their educational goals while taking into consideration the U.S.

Army's VolEd Program and the U.S. Army's leadership development process through policies, procedures, models, and approaches.

The overarching purpose of this study is to help the U.S. Army to determine whether current practices adequately provide an individualized approach to soldiers' educational goals and leadership development that is required for the organization's sustained success. Nested in that purpose is a desire to increase participation in the VolEd Program.

This research could influence the U.S. Army's future decision making to facilitate its strategic goals in developing adaptive and self-aware leaders who, through VolEd, are open to the constant changes of the modern operational environment. According to General Mark Milley, former Chief of Staff of the Army, "We want leaders that are tough, resilient, that can think and out-fight and out-smart the enemy. We want them to be adaptive and agile, and flexible. Moreover, we want them not only competent, but we want leaders of character" (as cited in Department of the Army [DA], 2014, p. 1). The current research creates the opportunity to gain knowledge that may be transferable to the corporate sector, nonprofit organizations, and other governmental institutions.

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LIST OF ABBREVIATIONS

A

| | |
|--------|---|
| AC | Active Component |
| ACE | American Council on Education |
| ACCESS | Army Credentialing and Continuing Education Services for Soldiers |
| ACES | Army Continuing Education System |
| ACED | Army Continuing Education Division |
| AFCT | Armed Forces Classification Test |
| AFQT | Armed Forces Qualification Test |
| AIT | Advanced Individual Training |
| ANOVA | Analysis of Variance |
| ArmyU | Army University |
| ARNG | Army National Guard |
| AR | Army Regulation |
| ASVAB | Armed Services Vocational Aptitude Battery |

B

| | |
|------|--------------------------------|
| BSEP | Basic Skills Education Program |
|------|--------------------------------|

C

| | |
|-------|-------------------------------------|
| CA | Credentialing Assistance |
| CivEd | Civilian Education |
| CSM | Command Sergeant Major |
| CLEP | College Credit Examination Program |
| CMF | Career Management Field |
| COOL | Credentialing Opportunities On-line |

D

| | |
|--------|--|
| DA | U.S. Department of the Army |
| DANTES | Defense Activity for Non-Traditional Education Support |
| DD | U.S. Department of Defense |
| DMDC | U.S. Defense Manpower Data Center |
| DoDI | U.S. Department of Defense Instruction |
| DoEd | U.S. Department of Education |
| DOL | U.S. Department of Labor |
| DSST | DANTES Subject Standardized Tests |

E

| | |
|--------|--------------------------------------|
| EI | Educational Institution |
| eMILPO | Enlisted Military Personnel Database |
| ESS | Education Services Specialist |
| ESO | Education Services Officer |

F

| | |
|------|-------------------------------------|
| FAST | Functional Academic Skills Training |
| FM | Field Manual |
| FY | Fiscal Year |

G

| | |
|-----|-------------------------------|
| GED | General Education Development |
|-----|-------------------------------|

LIST OF ABBREVIATIONS - continued

| | |
|------------------|---|
| G | |
| GPA | Grade Point Average |
| GT | General Technical |
| I | |
| ITAPDB | Integrated Total Army Personnel Database |
| J | |
| JAMRS | Joint Advertising Marketing Research |
| JST | Joint Services Transcript |
| M | |
| MOS | Military Occupational Specialty |
| MOU | Memorandum of Understanding |
| N | |
| NCES | U.S. National Center for Education Statistics |
| NCO | Non-Commissioned Officer |
| NCOES | Non-Commissioned Officer Education System |
| NGB | National Guard Bureau |
| O | |
| OPA | U.S. Office of People Analytics |
| OPM | U.S. Office of Personnel Management |
| P | |
| PAM | Pamphlet |
| PEBD | Pay Entrance Basic Date |
| PCS | Permanent Change of Stations |
| R | |
| RA | Regular Army |
| ROTC | Reserve Officers' Training Corps |
| RQ | Research Question |
| S | |
| SGM | Sergeant Major |
| T | |
| TA | Tuition Assistance |
| U | |
| U.S. | United States |
| U.S. Army HRC | U.S. Army |
| U.S. Army HRC | U.S. Army Human Resources Command |
| U.S. Army TRADOC | U.S. Army Training and Doctrine Command |
| USMEPCOM | U.S. Military Entrance Processing Command |
| USARC | U.S. Army Recruiting Command |
| V | |
| VA | Veterans Administration |
| VolEd | Voluntary Education |
| W | |
| WO | Warrant Officer |

LIFE FACTORS AFFECTING U.S. ARMY JUNIOR-ENLISTED SOLDIERS INREACHING THEIR EDUCATIONAL GOALS

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May 2020

243 Pages

Directed by: Randall Capps, Joseph Cangemi, and Stephan Walters

Department of Education Administration,
Leadership, and Research

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This study focused on drawing a picture of the dynamics and educational experiences of U.S. Army junior-enlisted soldiers in the rank of specialist in the RA. Those soldiers are eligible to participate in the U.S. Army's VolEd Program available worldwide. According to Gleiman and Zacharakis (2016):

The military relies on continuing professional education as a key component to the success of its organization. With decreasing budgets and increasing importance for a force that operates efficiently and thinks critically, the cognitive tension among training, education, and learning come center stage. (p. 81)

The researcher formed the research questions (RQs) sought to generate information about how soldiers use their educational benefits to forecast possible Army's VolEd enhancements to ensure the Army's leadership development goals are met.

The U.S. Army's ITAPDB was used to gather the pre-existing data and to provide analysis. Statistical analysis determined there were few significant relationships between demographic, educational, and military-service related variable groups. However, stronger statistical significance was found when a cross-variable approach was implemented. Within the context of this model, the demographic variables of marital status, soldier's age, and ethnicity had statistically significant differences on average grade point average (GPA) and end-of-course passing grades. The military service-

related variables of a soldier's military occupational specialty/career management field/pay entrance basic date (MOS/CMF/PEBD) and years in service indicated statistically significant differences on GPA and passing grades. The educational variables of GPA, class count, Basic Skills Education Program (BSEP), CivEd level, and general technical (GT) score showed statistically significant differences on GPA and passes.

In addition, when examining between-group covariances, the variable of soldier's age indicated a statistically significant difference on GT score and CivEd level. Finally, when examining the quantitative comparison between TA and non-TA user groups, findings showed that CivEd and PEBD, CivEd and age, CivEd and number of years in service, and GT score and MOS for both TA and non-TA users were statistically significant.

By knowing the factors that influenced a soldier's degree completion, and understanding mechanisms behind the process of participation in adult lifelong learning, the U.S. Army can improve measures that influence satisfaction of education benefits and can provide an improved overall perspective on a soldier's participation in VolEd Program. This study may help refine and redesign the U.S. Army's VolEd policies and procedures to enhance the program participation in alignment with the U.S. Army's goal to shape and guide the development of future organizational leaders, while increasing the collective understanding of leader development dynamics through VolEd within and beyond the American military context.

CHAPTER I: STATEMENT OF THE PROBLEM

Introduction

“Leadership is the activity of influencing people by providing purpose, direction, and motivation to accomplish the mission and improve the organization” (Department of the Army [DA], 2019b, p. 1-3). Regardless of position or rank, all soldiers can find themselves in a leadership role. Leadership can be exerted formally or informally depending on the situation. Therefore, the U.S. Army focuses on developing and raising leaders in every soldier through education, training, and experience (DA, 2019b). “When the military promotes its new leaders, the new leaders come from within, not from the outside. They come from the ranks” (Kiyosaki, 2015, p. 11). “Leader development is fundamental to the Army—leader development is the deliberate, continuous, sequential, and progressive process—founded in Army values—that grows soldiers into competent and confident leaders capable of decisive action” (DA, 2015b, p. 1-1; 2003, p. 75). Effective leaders allow for greater clarity of goals, which reduces uncertainty (Sashkin & Sashkin, 2003). Thomas (2006) stated that as servants of the nation, Army leaders have a great responsibility to ensure the success of missions.

“Today’s Army demands trained and ready units with agile, proficient leaders. Developing leaders is integral to institutional success today and tomorrow” (DA, 2015b, p. vi). Kotter (1996) argued that “leadership defines what the future should look like, aligns people with that vision, and inspires them to make it happen despite the obstacles” (p. 25).

The United States (U.S.) Army

The end of the Cold War era brought a realization to the U.S. Army leadership regarding needed changes. To grow into the future, the Army reduced the size of its forces by 600,000 and undertook key transformations (DA, 2019a). The U.S. Army faced transformation in two “primary dimensions: from Industrial Age to the Army Information Age and from a bipolar world with a single defined threat to a multipolar world with a seemingly infinite variety of threats” (Harper & Sullivan, 1996, p. 148).

The U.S. Army remains a changing organization. “As a geopolitical and social instrument for change, many aspects of the U.S. Army are enduring and steadfast, while other aspects must consistently adapt and evolve as the U.S., the world, and the operational environment change and evolve” (as cited in Walters, 2018, p. 3).

Historically, the U.S. Army has made significant efforts to strengthen the leader development program through education, training, and experience (Persyn, Polson, & Zacharakis, 2012). The Army began its journey to becoming a learning organization in the 1970s when Chief of Staff General Creighton Abrams formed the U.S. Army Training and Doctrine Command (TRADOC) to establish the Army’s school system, training centers, and developmental actions—in order to put individual training and education and the responsibility for modernization under a single organization (Harper & Sullivan, 1996). The U.S. Army’s Combined Arms Center (CAC) is the proponent for Army training, education development, and critical operational lessons learned (DA, 2015a). The CAC supports and integrates Army training and education across all cohorts to support Army force generation.

McCarthy (2019) emphasized that the U.S. Army “must maintain a sustainable level of readiness to meet current demands while executing an aggressive modernization strategy to ensure the Total Army remains the most lethal ground combat force in the world” (p. 1). To achieve this, the U.S. Army continues to integrate modernization efforts across doctrine, organizational designs, training models, and leader development (R. McCarthy, personal communication, August 15, 2019). The military relies on continuing professional education as a key component to the success of its organization. According to Hefler and Markowitsch (2008), “the organizations that offer more opportunities for lifelong learning participation is larger, undertake innovative work, employ mostly high-qualified employees, and are active in knowledge-intensive sectors of the economy” (as cited in Boeren, 2016, p. 102).

Adult Learning

Throughout the literature, there are many definitions and models related to the field of study on the broad topic of adult learning. Soares (2013) defined *adult learners* as “individuals already in the workforce who lack a postsecondary credential yet are determined to pursue further knowledge and skills while balancing work, life, and education responsibilities” (as cited in American Council on Education [ACE], 2019). Merriam-Webster explains *learning* as “knowledge or skill acquired by instruction or study” (“Learning,” n.d.). Cross (1981) discussed the importance of placing the learner in the context of the learning society and suggested to “focus on seeking knowledge helpful in developing learners capable of using the multiple resources of the learning society for their growth” (p. xxiii). The United Nations Educational Scientific Cultural Organization’s (UNESCO) supreme legislative body adopted the definition of adult

learning in 1977 as the first attempt to recognize adult learning from this perspective:

“The term *lifelong education and learning* denotes an overall scheme aimed both at restructuring the existing education system and at developing the entire educational potential outside the education system; in such schemes, men and women are the agents of their own education” (Cross, 1981, p. xxiii).

“Adult learning is defined as the process of an adult gaining knowledge and expertise” (Knowles, Holton, & Swanson, 2005, p. 174). The U.S. Army believes the process must engage adult learners not just to learn but also to think critically and understand the relevance of what they learn (DA, 2018d). Knowles (1980) proposed that adult learners are more interested in learning subjects that have direct application and influence on their job or personal life.

The U.S. Army’s learning strategy is to “optimize the achievement of all learning outcomes, and ultimately enhance soldier and unit readiness” (DA, 2017d, p. 6). The U.S. Army recognizes the imperative to create a culture of career-long learning that facilitates the continued development of “agile, adaptive, and innovative leaders who thrive in conditions of uncertainty and chaos and are capable of visualizing, describing, directing, leading, and assessing operation in complex environments and against adaptive enemies” (DA, 2017d, p. 6).

The U.S. Army defines learning as:

the cognitive, affective, and physical process where a person assimilates information and temporarily or permanently acquires or improves skills,

knowledge, behaviors, and attitudes. In the U.S. Army’s context, it involves the

study in a military or civilian institution, in the operational Army, or through self-development. (DA, 2017a; 2017c; 2018c, p. 31)

Understanding a soldier's motivation in the adult learning context enables an expansion of practical knowledge regarding the removal of barriers and overall increased participation in VolEd.

The Statement of the Problem

Young men and women join the U.S. Army for different reasons. Some reasons include patriotism, pay plus benefits, full medical coverage, skills and training, leadership opportunities, and education benefits (DA, 2019i). Former Sergeant Major (SGM) of the Army Daniel Dailey claimed:

The Army already exceeded its retention goals for 2019 of 68,000 active duty soldiers, along with 15,600 for the U.S. Army Reserve (USAR) and 39,000 for the U.S. Army National Guard (ARNG), and could come close to its record numbers of last year. (as cited in Lacdan, 2019, p. 3)

The Department of Defense Joint Advertising, Marketing Research, and Studies (JAMRS) published the survey results and stated that as of May 2019, education remains the number one reason applicants are joining the U.S. military (DD, 2019c). The Office of People Analytics (OPA) reported in the New Recruit Survey in Fall 2016 that 72% of recruits expect to earn a college degree while serving on active duty (OPA, 2019, slide 5). Therefore, it raises a question of why millions of dollars provided by DoD, allowing soldiers to earn certificates, undergraduate, and graduate degrees while serving in the military, are going unused. What obstacles and barriers exist to delay soldiers meeting their educational goals?

Further research is needed to explain what factors prevent soldiers from completing their degrees and how each factor can have a positive or negative impact on the overall educational journey of the military student. Since previous research pertaining to the U.S. Army junior-enlisted soldiers' participation in adult learning and TA usage is deficient, with only 83.35% of study participants earning a high school diploma or GED equivalent as their highest level of educational attainment, the current study could be useful for the future evaluation and reorganization of the U.S. Army. Also, the study could add to the body of academic research pertaining to the targeted population and worldwide Army education community and could expand to other military branches. Daniels and Minot (2020) argued that "research is often described as the creation of knowledge" (p. 3). According to Merriam-Webster, the simple definition of *knowledge* is "information, understanding, or skill that you get from experience or education" ("Knowledge," n.d.). VolEd delivers concepts, skills, and tools necessary for soldiers to succeed in positions of increasing responsibility. The Army's VolEd Program also prepares soldiers for solving problems and challenges they have yet to encounter within their careers in a complex world (DA, 2018d). Therefore, the purpose of this study is to determine to what extent the various factors play a critical role in TA usage, which could lead to degree attainment while taking into consideration military leadership development strategy and modern trends in postsecondary education programs.

Failure to recognize and adequately address the needs of soldiers as a unique population may cause soldiers to experience difficulties, resulting in a higher probability for degree non-completion. Whetzel (2016) noted that "providing more knowledge, training, and priority on the service member's education should help develop pride in the

service member, make a smarter force, and give an educated member back to society” (p. 2).

Purpose of the Study

The purpose of this study is to describe the direction and degree of relationship that might exist between the demographic, educational, and military service-related factors and TA usage, which directly contributes to the adult learning participation concept among U.S. Army soldiers serving in the RA in the rank of specialist, as well as degree attainment as an overall goal. The Lumina Foundation (2019a) reported that the societal impact of higher attainment rates is remarkable.

There are a number of correlates with higher educational attainment that indicate overall better social, economic, and personal outcomes for citizens. Societies with higher educational attainment can expect greater civic and social engagement, higher rates of voter participation and volunteerism, healthier lifestyles, and less dependence on public assistance. (Lumina Foundation, 2019b)

The researcher selected a methodology that would allow maximizing the potential for discovering new insight into TA program participation that could be used across the U.S. Army. The Cross model classification of barriers predetermined the theoretical framework for this study. Cross (1981) defined the barriers to adult learning as (1) situational, such as time, military work schedules, family responsibilities and commitments; (2) institutional funding, such as the U.S. Army’s policies and procedures, the soldier’s chain of command, the educational institution’s (EI’s) support with the vital role in encouraging or discouraging soldiers from participating in VolEd; (3) and dispositional, such as the soldiers’ self-perceptions and attitudes about themselves as

learners. Consistent with the quantitative research method, the researcher examined a range of factors that could potentially explain the TA usage deficiencies in the U.S. Army's junior-enlisted soldiers in the rank of specialist in the RA.

The researcher applied the systematic effort to remain open to explanations outlined in the application's purpose of the inductive case research (Mertler, 2019). The researcher collected information regarding the factors, which comprise the following categories: (1) military, (2) social, (3) personal, (4) integration support, and (5) resources. Four categories out of five were presented as the sub-categories. These factors may affect soldiers' decisions in adult learning participation and meeting the overall educational goals.

Research Questions

The research design of this non-experimental quantitative study is exploratory. This study centers on answering the following central research question: *To what extent are the U.S. Army junior-enlisted soldiers in the rank of specialist serving in RA using TA on active duty?*

Three additional RQs to this exploratory study are as follows:

1. Is there a difference in TA usage in the U.S. Army junior-enlisted soldiers in the RA on active duty based on demographic factors (such as age, gender, ethnicity, marital status, and race)?
2. Does the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA differ based on military service-related factors (such as MOS, CMF, PEBD, age into the army, and number of years in service)?

3. To what extent do the educational factors (Armed Services Vocational Aptitude Battery [ASVAB] or the Armed Forces Classification Test [AFCT] GT scores, Civilian Education [CivEd] level, BSEP participation, cumulative total of classes taken with TA) affect the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA?

The four exploratory questions are rooted in the applied reality that all eligible junior-enlisted soldiers must meet basic U.S. Army TA eligibility requirements. The other precondition that helps define the TA eligibility is to meet the training and education prerequisite by completing advanced individual training (AIT), which includes no military-related academic holds.

General Methodology

In this study, Chapter I introduces the problem statement, the purpose, and the significance of the study. Chapter II, the literature review, focuses on a comprehensive review of the U.S. Army's leader development concept through the Army's Leadership Development Model, reviews the U.S. Army VolEd program, and concludes with Cross's model of adult motivation for learning in connection to the military-specific barriers in adult participation theory. Chapter III describes the research study's methodology. Chapter IV presents the process, data collection, and data analysis procedures for this study. Finally, Chapter V discusses the findings of this study and provides suggestions for future research.

Significance of the Study

This study focuses on identifying and analyzing the factors regarding why many soldiers do not complete their degrees while serving in the military, despite the

substantial educational benefits provided to them through the Army, and the support from the Army education centers/offices and EIs worldwide. A recent survey showed that the number one reason young men and women join the U.S. military is because of the education benefits the military provides (Joint Advertising Marketing Research [JAMRS], 2019). However, utilization of TA funds remains relatively low. This study explores and classifies factors as to why soldiers fail to complete their educational pursuits despite the possibility of future educational attainment being the number one reason for recruitment. The researcher attempts to explain how factors may block soldiers from completing their degrees and elaborates on how each factor could have a positive and negative impact on the overall educational journey of military students.

The researcher gathered information about factors preventing soldiers from reaching their academic goals and identifies obstacles that soldiers face while pursuing education in hopes for securing a better understanding of how the Army uses TA and boosts the soldiers' credentials on active duty and in the civilian sector. The researcher describes and seeks to understand the difficulties of the target sample, while attempting to determine the resources and processes available to the soldiers and how the soldiers might benefit from resources in the future. Further, this research seeks to inform and connect stakeholders, such as the U.S. Army and EI partners, in hopes they will continue to work together in implementing a program to align soldiers' prior learning experiences with their educational goals.

As of 2019, there have been no known formulaic, systematic, quantitative studies that have purposefully measured TA usage within the U.S. Army, beyond the analysis conducted internally by ArmyU, ACCESS, formerly known as ACED. Furthermore,

there are no known studies that have examined the educational, demographic, and military service-related variables and their interactions. Most of the studies discovered are directed toward the Army education center's personnel who serve the soldiers, but the researchers did not study the soldiers themselves (Penrod, 2010; Whetzel, 2016).

Assumptions of the Study

Four assumptions underly this study. The first assumption is that the U.S. Army will continue to value the role VolEd plays in developing Army leaders, promote and encourage the educational opportunities for soldiers through policy and guidance, and provide the TA and army credentialing assistance (CA) with funding to fulfill the educational needs wherever they exist. According to the second assumption, there is a direct connection from the soldiers' perspectives on the need for the fulfillment of VolEd, from the soldiers believing in the value of VolEd, engaging and involving themselves in various types of education-related programs and services, and applying the education to their professional and personal lives. The third assumption of this study is that soldiers in the sample population were treated equally and fairly regarding all demographic and military service-related factors and received an equal opportunity for development, as outlined in the U.S. Army's leader development model. The final assumption is that educational institutions (EI) will continue to "fulfill a role in the holistic professional development and career-long learning of soldiers within the institutional and self-development learning domains" (DA, 2018b, p. 1).

Limitations of the Study

According to Mertler (2019), the limitation involves the aspect of the study that is outside the control of the researcher, which might have a potentially adverse effect on the

outcomes of the research. A fundamental limitation to this study also includes using only junior-enlisted RA soldiers in the rank of specialist as a sample, and not including the various other levels and types of ranks within the U.S. Army. In addition, only the RA sample is examined; therefore, soldiers from the U.S. Army National Guard (ARNG) and the U.S. Army Reserve (USAR) are not included in this study.

This study also does not review all demographic, educational, and military service-related factors, which could affect junior-enlisted soldiers in the rank of specialist during the decision-making process of VolEd participation, as well as in meeting their educational goals while serving on active duty. The training, education, and experience variables for all leaders in the U.S. Army have many commonalities. However, the differences in required CivEd, professional military education, assignment opportunities, and job-specific training and education for the leaders within the U.S. Army are beyond the scope of this study.

This quantitative research project evaluates and analyzes only the selected population sample comprised of RA junior-enlisted soldiers in the rank of specialist who were currently serving on active duty in the U.S. Army as of September 30, 2019. The equivalent ranks to U.S. Army specialist of other U.S. military branches are not included in the study.

Another limitation of this study relates to the U.S. Army's leader development program. The literature review of this study is primarily centered on VolEd as a key mechanism used by the U.S. Army to help develop their leaders. It is essential to mention that other critical leader development characteristics related to the U.S. Army

doctrine, such as professional military education and training, are not analyzed within the scope of this study.

An additional limitation to be considered in this study is that the U.S. Army's TA policy is strictly focused on successful course completions. The policy at the time of the study restricted further TA usage for soldiers whose TA GPA fell below 2.0 at the undergraduate level and 3.0 at the graduate level. Therefore, this policy limited the ability of the researcher to adequately study the soldiers whose TA GPA fell below a 2.0 or 3.0 while using TA, since the soldiers were required to use alternative sources of funding.

Another limitation of this study is the lack of longitudinal data regarding degree completion. At the time of this study, EIs were encouraged to report graduations. However, per Army policy, mandatory reporting was not a requirement. Therefore, the dataset lacks the necessary robustness to provide accurate statistical analysis. The researcher concludes that the limited sample size of available graduations does not support an accurate depiction of the overall population. Use of education funding other than TA, such as Veterans Administration (VA) benefits, other government funding, and private funding sources, are unknown and not included in this study.

The researcher conducted this study during the fundamental transformation in the U.S. Army's ongoing initiative to align Army education, credentialing, system authorities, responsibilities, and resources by transitioning responsibilities from U.S. Army Human Resources Command (HRC) to TRADOC. This transition may have affected the fundamental understanding and the method of how the U.S. Army would approach and engage soldiers with the U.S. Army TA program in the future.

As a final consideration, this study is limited to quantitative analysis. A mixed methodology of research would provide a more vigorous and complete understanding of the population and the engagement in higher learning. The mixed method also would provide an opportunity to incorporate the qualitative approach in the present quantitative study. Mertler (2019) asserted that “relying on a single plan for data collection and analysis may limit the researcher in terms of his or her ability to provide such an answer” (p. 130).

Definition of Key Terms and Concepts

The following list of terms and associated definitions provide clarification for different terms or phrases used throughout this study.

Active duty: “Active duty is described as full-time duty in military service of the U.S.” (DA, 2019c, p. 67).

Adult learning: Boyd et al. (1980) described the term adult learning as “the act or process by which behavioral change, knowledge, skills, and attitudes are acquired” (as cited in Knowles, Holton, & Swanson, 1998, p. 11). Knowles et al. (2005) expanded the definition by stating that “adult learning is the process when adults are gaining knowledge and expertise” (Knowles et al., 1998, p. 174). Furthermore, “learning emphasizes the person in whom the change occurs or is expected to occur” (Knowles et al., 1998, p. 11).

Active Component (AC) military: The AC military is comprised of full-time military men and women who serve in units that engage enemy forces, provide support in the combat theater, provide other support, or who are in individual accounts (transients,

students). These men and women are on duty 24 hours a day and receive full-time military pay (DD, 2005).

Army Credentialing and Continuing Education Services for Soldiers (ACCESS): ACCESS is formerly known as the Army Continuing Education Division (ACED). In October 2019 per a directive from the Undersecretary of the Army, the Army VolEd and CA programs realigned under TRADOC and ArmyU “to ensure the effectiveness and efficiency, and to meet the needs of the soldiers for the duration of their military career” (R. McCarthy, personal communication, August 15, 2019). The ArmyU ACCESS was established per Section 4302, Title 10, U.S. Code, which authorizes use of federal funds for enlisted members and officers of the U.S. Army to study and receive instruction to increase their military efficiency and to enable them to return to civilian life better equipped for industrial, commercial, and business occupations (DD, 2019k). Through its many programs, the Army Continuing Education System (ACES) promotes lifelong learning opportunities and sharpens a competitive edge of the U.S. Army (DA, 2012).

Army education center or office: The Army education center or office is the RA, ARNG, or USAR location where Army continuing education (ACES) programs and services are provided. Army education centers and offices are typically managed by army civilians, who must be Education Services Series GS–1740 qualified (DA, 2019c; DD, 2019b).

Armed Forces Classification Test (AFCT): The AFCT is administered to soldiers desiring to improve their enlistment Armed Services Vocational Aptitude Battery (ASVAB) or previous Armed Forces Classification Test (AFCT) scores (DA, 2012). The AFCT is an in-service version of the ASVAB exam.

Army leader: “An Army leader is anyone who, by virtue of assumed role or assigned responsibility inspires and influences people by providing purpose, direction, and motivation to accomplish the mission and improve the organization” (DA, 2019b, 1-13).

Armed Services Vocational Aptitude Battery (ASVAB): The enlistment ASVAB is used to test for eligibility to enter the Army and aptitude for a specific MOS (DD, 2019a, 2019c). According to Mertler (2019), “the aptitude exams are the standardized tests that provide an estimate of a person’s ability to perform at some time in the future or a different situation” (p. 295). In the first decade of the 20th century, the U.S. Army adopted an idea of testing and selection to aid in the identification of potential leaders and developed the Army Alpha Test (Sashkin & Sashkin, 2003).

During World War II (WWII), the general mental aptitude test, or the Army Alpha Test, used to select officers during World War I was replaced by the Army General Classification Test (Sashkin & Sashkin, 2003). The Army General Classification Test’s (AGCT’s) purpose was to assign recruits to military jobs. The AGCT consisted of arithmetic, vocabulary, and spatial relationship content to testing general learning ability (Giangreco, 2011). After the Vietnam War when America’s military went to the all-volunteer force model, the first ASVAB was presented with the idea to rebuild and reinvigorate the force (DA, 2019a). The ASVAB testing merged enlisted selection (screening of applicants) and classification (matching of applicants to job positions) in one exam (Giangreco, 2011). The modern computerized exam format and written exam version of the ASVAB is currently used by all branches of the U.S. military as an aptitude (intelligence test) to select individuals with sufficient skills and abilities to

comprehend military training (DD, 2019a). Four million recruits have taken the computer-adaptive version of the ASVAB exam since 1990 (U.S. Defense Manpower Data Center [DMDC], 2019).

The ASVAB exam is comprised of nine categories: general science (GS), arithmetic reasoning (AR), word knowledge (WK), paragraph comprehension (PC), mathematics knowledge (MK), electronics information (EI-1), automotive and shop information (AS), mechanical comprehension (MC), and assembling objects (AO) (DA, 2017e; DD, 2019a). A 10th category called verbal expression (VE) is resolute by adding working knowledge (WK) with paragraph comprehension (PC) (DA, 2017a, 2017e).

To qualify for military service, applicants must achieve a qualifying score on four sections of the ASVAB (AR, MK, WK, PC), which comprise the minimum Armed Forces Qualification Test (AFQT) score for enlistment. The minimum score required to qualify for enlistment varies according to the different U.S. military services (DA, 2017a). The composite scores on the ASVAB also determine the MOS for which the applicant qualifies once enlisted; however, the final placement into a job specialty often is determined by the needs of the Army. Appendix A outlines the U.S. Army's current composite score categories on the ASVAB. The details for the U.S. Army's MOSs are outlined in Appendix B.

Army University (ArmyU): "ArmyU is not a brick and mortar structure; it is a virtual, distributed, constructive, and collaborative learning environment encompassing existing Army education institutions. ArmyU connects professional military education institutions across the Army into a single educational structure" (DA, 2014). The U.S. Army established the ArmyU in 2015 to align Army professional military and civilian

education programs under a unified academic construct. The objectives include: (1) increase academic rigor and relevance, improve learning integration and synchronization; (2) increase leader competence, character, and commitment; (3) enhance the prestige of Army education; and (4) promulgate best practices and increase institutional agility to meet the needs of the operating force (DA, 2017d).

Basic Skills Education Program (BSEP): “The BSEP is a component of the Functional Academic Skills Training (FAST) program that provides on-duty academic instruction to support soldiers’ learning, self-development, and career progression” (DA, 2018b, p. 15; 2018e; 2019c). “The BSEP instruction assists in the development of reading and math skills” (DA, 2019c, p. 67). Also, it provides academic instruction to support soldiers’ job-related learning, the performance of military duties, career progression, and lifelong learning. The length of BSEP varies from 40 to 60 hours based on a soldier’s basic education level and knowledge (DA, 2018e). The BSEP curriculum develops skills in such areas as reading, mathematical computation, writing, speaking, science, English as a second language, and computer skills (availability of all areas depending on location).

Soldiers’ objectives for enrollment in BSEP may include the following: (1) increasing GT score for MOS re-classification, (2) establishing eligibility for commissioning programs, (3) being a pre-requisite for attendance in career development courses, such as the Non-Commissioned Officer Education System (NCOES), (4) increasing chances for promotion, and (5) improving basic skills for college courses (DA, 2018e). According to Boeren (2016), “adults with the low level of literacy and no or low

levels of qualifications will not be allowed into postsecondary education programs unless they have increased their level of knowledge and skills to the desired standards” (p. 98).

Education: Knowles et al. (1998) reported “education is an activity undertaken or initiated by one or more agents that is designed to effect changes in the knowledge, skill, and attitudes of individuals, groups, or communities” (p. 10). The U.S. Army defines *education* as a “structured process to impart knowledge through teaching and learning to enable or enhance an individual’s ability to perform in unknown situations” (DA, 2017a, 2017c, p. 42). Hesburgh et al. (n.d.), in the preface of the *Patterns for Lifelong Learning*, declared, “The worse education is one which produces a person who thinks he or she knows everything, that formal education is finished and left behind” (as cited in Moreland & Goldenstein, 1985, p. vii).

Educational Institution (EI): College or University operating within the U.S., to include the District of Columbia and U.S. territories, accredited by an accrediting organization recognized by the Department of Education (DoEd), approved for VA funding, and certified to participate in Federal student aid programs through the DoEd under Title IV of Public Law 89–329, also known as the Higher Education Act of 1965. In addition, all EIs receiving TA must be signatory to the current DoD Memorandum of Understanding (MOU). DoD maintains a current list of TA-eligible EIs on the DOD MOU website at www.dodmou.com (DA, 2019c).

Education Services Officer (ESO): The ESO is the Department of the Army (DA) employee who oversees the operation of a U.S. Army installation education center that provides postsecondary education services to the military community. “ESO plans, develops and markets installation VolEd services, manages Army education centers or

offices, and advises commanders on the status and needs of the installation's VolEd Program" (DA, 2019c, p. 68). The ESO, state ESO, or reserve education services specialist (ESS) serves as the primary advisor to the installation commander, National Guard State (NG) adjutant general, or U.S. Army Reserve (USAR) commander concerning soldiers' continuing education programs and services, to include support of training requirements (DA, 2012).

Education Services Specialist (ESS): The ESS is the DA employee who serves in middle management at an installation education center, assisting the ESO in managing programs and services. "ESSs manages specific VolEd Programs (FAST, counseling, or testing), coordinates designated ACES projects, and manages Army education centers or offices in the ESO's absence" (DA, 2019c, p. 68).

General Technical (GT) score: The GT score is one of the 10 aptitude scores of the AFCT exam. "These scores qualify soldiers to perform in particular military occupations, attend an Army formal school, become a warrant officer (WO), officer, or attend a Reserve Officers' Training Corps (ROTC) program" (DA, 2012, p. 29).

GoArmyEd: GoArmyEd is a DA automated education portal that enables the U.S. Army education personnel to support soldiers as they access TA benefits anytime, anywhere (DA, 2012). "GoArmyEd is a virtual gateway to request federal TA online at any time for classroom and distributed learning college courses. GoArmyEd also provides information about other ACES programs and services" (DA, 2019c, p. 68). GoArmyEd uses personnel data from the Integrated Total Army Personnel Database (ITAPDB) records to determine a soldier's eligibility for Army TA (DA, 2019c).

Guidance counselor: A guidance counselor is a DA employee who works directly with members of the military community to provide educational counseling. “Army guidance counselors require skills in counseling students or enrollees to establish educational and occupational objectives and must complete a counseling practicum, per U.S. Office of Personnel Management (OPM) standards” (DA, 2019c, p. 29). Counselors assist soldiers in establishing long- and short-range educational goals.

Joint Services Transcript (JST): The JST provides college credit recommendations for military experience and training recommended by the American Council on Education (ACE) (JST, 2019).

Knowledge: According to Merriam-Webster, the word *knowledge* has the following definition: “information, understanding, or skill that you get from experience or education knowledge” (“Knowledge,” n.d.).

Leadership: According to Northouse (2019), “leadership is a complex process having multiple dimensions” (p. 1). Fleishman et al. (1991) noted that “in the past 60 years, as many as 65 different classification systems have been developed to define the dimensions of leadership” (as cited in Northouse, 2019, p. 5). Currently, over 850 academic definitions for the word *leadership* exist (Bennis & Nanus, 2007). The U.S. Army’s definition of leadership is “the activity of influencing people by providing purpose, direction, and motivation to accomplish the mission and improve the organization” (DA, 2019b, 2019h). The U.S. Army’s most recent definition of leadership is the definition used for this research. Maxwell (1998) agreed that “leadership is influence—nothing more, nothing else” (p. 17). “Leadership is about power, and power is the capacity to influence, persuade, and inspire others” (Harari, 2002, p. 201).

Leader development: According to the U.S. Army, *leader development* is defined as “a process that aligns training, education, and experience to prepare leaders who exercise mission command to prevail in unified land operations” (DA, 2013b, p. 6). Per Army Doctrine Publication (ADP) 6.0, Mission Command is “the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander’s intent to empower agile and and adaptive leaders in the conduct of unified land operations” (DA, 2019h, p. 1-3).

“Military leadership is unique because the armed forces develop and select their leaders” (DA, 2019b, p. 6-1). Maxwell (1995) stated that “the more people you lead, the more leaders you need” (p. 13). The most current training doctrine and regulations governing soldiers’ leader and self-development programs is represented by Army Regulation (AR) 350–1, AR 600–100, DA Pamphlet (PAM) 600–3, DA PAM 600–25, and Field Manual (FM) 7–0 (DA, 2019c, p. 7).

Military student: The military student is a non-traditional student who is pursuing a college degree or credential at an academic institution while serving in the Army, Navy, Air Force, Marine Corps, or Coast Guard. Military students are eligible to participate in the VolEd Program by using federal and state TA to achieve their educational goals (DD, 2014; Woods, 2019). The military student is focused and mission-driven. Also, a military student respects the chain of command and is accustomed to hierarchy. In this study, the researcher focuses specifically on the U.S. Army soldier.

There is a distinction between military and veteran students. A veteran student is defined as “a person who served in the active military, naval, or air service, and was discharged or released under conditions other than dishonorable” and who is pursuing an

educational goal while utilizing Veteran Administration (VA) benefits (VA, 2019). It is imperative to acknowledge the difference between the adult learner and the traditional learner; soldiers are adult learners, often categorized as non-traditional students in the U.S. Army VolEd environment.

Motivation: In the military context, *motivation* is defined as “the will and initiative to do what is necessary to accomplish a mission” (DA, 2019b, p. 1-14). Understanding human motivation requires an understanding of human needs and human emotions (Cangemi, Kowalski, Miller, & Hollopeter, 2005). Knowles et al. (1998) argued that “adults tend to be more motivated toward learning that helps them solve problems in their lives or results in internal payoffs” (p. 149).

Non-traditional student: A non-traditional student is usually over the age of 24 and characterized by full-time employment, responsibilities to families, and sometimes with the gap between completing secondary education and engaging in higher learning at EI (ACE, 2019; Chen, 2014; Fairchild, 2003; Khiat 2015). The non-traditional student may perform two roles: soldier and student. The roles can “coincide, compete, and collide” (Wilson, Smith, Zacharakis, & Polson, 2012, p. 66). The non-traditional students embody roughly 98 million people, according to the U.S. Census Bureau’s 2016 Current Population Survey (ACE, 2019).

Postsecondary education programs: According to current Army policy, postsecondary education programs include academic, vocational, technical, and occupational classes of study leading to a certificate, diploma, or degree. Postsecondary education programs include certificates or diplomas and associate’s, bachelor’s, and master’s degree programs (DA, 2019c).

Regular Army (RA): “The RA, commonly referred to as the active duty force, comprises full-time soldiers supported by the Army Civilian Corps. The RA is under the command of the President of the U.S.” (DA, 2019a, p. 1-3).

Self-development: “Self-development is planned, goal-oriented learning that reinforces and expands the depth and breadth of an individual’s knowledge base, self-awareness, and situational awareness to enhance professional competence and meet personal objectives” (DA, 2017c, p. 45; 2018b; 2019c, p. 69). Brouwer (1964) commented that “A man is a master of his destiny in the sense that he takes charge of his development if he wants to grow. Nothing can be done to him to make him grow; he grows only as he wants to, and as his insights enable him to” (p. 56). Brouwer’s argument remains relevant half a century later. “Development is a process of change. Developmental growth is the same as learning” (DA, 2015b, p. 3-5). “Self-development focuses on maximizing strengths, improving weaknesses, and achieving individual development goals” (DA, 2018b, p. 14).

Self-leadership: “Self-leadership is a process of self-influence, in which one leads, motivates, and controls personnel behavior toward reaching self-defined goals” (Steinbauer, Renn, Taylor, & Njoroge, 2014, p. 381). “Self-leadership comes first. It makes every other kind of leadership possible” (Maxwell, 2014, p. 87). “The key to leading yourself is to learn self-management” (Maxwell, 2005, p. 85).

Traditional versus non-traditional postsecondary EIs: A traditional school comprises a regionally or nationally accredited university or college that has entrance requirements, is accredited, and typically is not a for-profit organization. Non-traditional

EIs typically are for-profit, have no college entrance requirements, are not accredited or have provisional accreditation, and have no limits on schedules (Ashanti, 2012).

Traditional student: The traditional college student fully integrates into a campus community where he or she engages in activities that encourage self-discovery (Wilson et al., 2012).

Tuition Assistance (TA): TA is “funds provided by the military services to pay a percentage of the charges of an EI for the tuition of an active duty member of the Armed Forces enrolled in courses of study during his or her off-duty time” (DD, 2007, p. 2; DA, 2019c). This research is limited to active duty soldiers’ use of TA. The TA program provides financial assistance for voluntary off-duty education programs to support the soldier’s professional and personal self-development goals. TA is available to eligible soldiers for courses offered in the classroom or by distance learning that are part of an approved academic degree or certificate program. The courses must be offered by EIs that are registered in GoArmyEd, are accredited by accredited agencies that are recognized by the U.S. DoEd, and are signatories to the current DoD MOU (GoArmyEd, n.d.). In the fiscal year (FY) 2018, DoD provided TA for about 200,000 service members who enrolled in over 600,000 courses. The cost was about \$425 million (DD, 2019d).

Voluntary Education (VolEd): The VolEd program consists of postsecondary education programs of study in which soldiers elect to participate during their off-duty time (DD, 2007, 2014; DA, 2019c). VolEd has existed for many years and has been known by a variety of names including adult education, military education, professional military education, joint professional military education, continuous education, continuing education, lifelong learning, organization knowledge, and adult learning

(Gleiman & Zacharakis, 2016). “Adult Learning rests on individual interest and initiative” (Courtney, 1992, p. xv).

Adult learning is the “process powered by the learner and supported and stimulated by collaboration with others; social interaction empowers making meaning” (Soares & Choitz, 2019, p. 7). Boeren (2016) argued that “adult learning refers to learning that takes place in adulthood, mainly after the end of compulsory initial education, including postsecondary education programs immediately following the end of compulsory education” (p. 10). For the purpose of this study, the term VolEd is used.

Chapter I Summary

“Today, the U.S. military is heavily committed to educating and training its workforce” (Zacharakis & Polson, 2012, p. 1). Leadership underprints everything the Army does, which is why the Army continuously invests in its people (DA, 2018b). The U.S. Army is continuing to meet the organizational need to develop adaptive leaders who can persist in a complex world. Dempsey and Brafman (2018) indicated “the overall goal of leadership is to increase effectiveness and build a history of successes within the organization” (p. 130).

The creation of the Army University (ArmyU) illustrates the Army’s commitment to innovative education, preparing leaders to succeed in the classroom and on the battlefield. This effort demonstrates the Army’s assurance to the adaption of a proven model of educational excellence and applies it to the military profession. The ArmyU proven model was designed to foster communication and ties between the Army and civilian educators and institutions (DA, 2015c). The FY 2019 realignment of the U.S. Army HRC ACED under the TRADOC ArmyU was a significant effort in “streamlining

VolEd with military training to align Army education, a newly launched CA program, system authorities, responsibilities, and resources to ensure effectiveness and efficiency” (R. McCarthy, personal communication, August 15, 2019). “The self-aligning organization has an ‘invisible hand’ of culture and systems that keep everyone in the organization doing the right things right” (Labovitz & Rosansky, 1997, p. 144). The latest merge of the U.S. Army HRC ACED under TRADOC, ArmyU ACCESS, is a strategic move to unite VolEd and training under the same organization.

Adult learning participation is an extremely broad topic. Thus, the defined strategy for this research effort is to help the U.S. Army discover possible ways to enhance the VolEd Program. Military education programs encompass almost every adult education component from basic training through graduate-level postsecondary education (DA, 2019c).

The following central research question summarizes the intent of this study: *To what extent are the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA using TA?*

The overarching purpose of this study is to help the U.S. Army gain a deeper understanding of the dynamics of adult learners and barriers they may encounter in pursuing their educational goals while serving on active duty. The researcher hopes to contribute to the U.S. Army’s endeavor “to develop agile, adaptive, and innovative leaders who thrive in conditions of uncertainty and chaos and are capable of visualizing, describing, directing, leading, and assessing operations in complex environments and against adaptive enemies” through VolEd (DA, 2015a, p. 1).

CHAPTER II: REVIEW OF THE LITERATURE

Introduction

As the United States' largest employer, the U.S. DoD is also the largest provider of adult education, offering training and education for a workforce of over 3.87 million members, including 1.3 million active duty military (Persyn et al., 2012; U.S. DMDC, 2019; U.S. Department of Labor [DOL]). According to DoD Directive (2007), "Adult education is services or instructions below the college level for adults who lack sufficient mastery of basic educational skills (English, reading, writing, speaking, and mathematics) to enable them to function effectively in society" (p. 2).

The U.S. Army shows initiatives to improve adult education throughout the organization by delivering "an adaptive blend of learner-centric training and education which combines with experience to enable development" (DA, 2011, p. 7; 2018d, p. 7). "The Army's goal is for every soldier to become an adaptive learner who is continuously learning and growing in their tactical, technical, and educational competencies and skills. Civilian education and military professionalism are not mutually exclusive; they are mutually supporting" (DA, 2018b, p. 15).

The critical aspect of this literature review is to help the U.S. Army to address various factors preventing soldiers from meeting their educational goals and to explain the U.S. Army's VolEd Program through the lens of the U.S. Army's leader development program. Furthermore, it is essential to understand what the target population expects from VolEd, what motivates soldiers to engage in learning, and the preferred forms of learning in the military environment. Soldiers come to EIs "with prior-experiences,

knowledge, and abilities that must be recognized, honored, used and credited” (Soares & Choitz, 2019, p. 7).

This study also addresses the substantial educational benefits offered to soldiers through GoArmyEd and the support provided by the Army education centers and EIs worldwide. Soldiers interested in the VolEd Program are provided guidance and counseling services by qualified personnel so they can make the most efficient use of government resources and the most effective use of their own time, money, and effort (DD, 2007).

Research is fundamental for the strength and advancement of an organization. It is crucial in identifying the most optimal plan of action. Research creates a unique path for an organization to follow and succeed in the modern world of competition and innovation, and the U.S. Army, one of the oldest organizations in the U.S., is no different in this context. Progress and improvement can be easily observed by comparing current data with historical evidence.

Research allows organizations to enhance the scope, improve applicability, and quality of results. According to Mertler (2019), “research is the key to answering the questions, solving the problems, and fostering creativity, innovations, and advancements” (p. 3). The most uncomplicated goal of conducting research is to find answers to the particular question. Mertens and Wilson (2012) reported that “evaluation is situated in the challenges of everyday life, yet it differs from everyday ways of responding to such issues by forcing on a systematic process that is known as program evaluation” (p. 5).

Throughout this literature review, cautious efforts are made to analyze and understand each topic from both an individual and organizational perspective while

looking for relevant overlaps between various fields of study. Knowles et al. (2005) stated that if the researcher wants to retain control over the evaluation process while gaining valid data, the researcher must reach outside his or her internal reference to obtain objective evaluation data.

The overarching purpose of this research is to explore possible barriers to TA usage to help the U.S. Army and other culturally similar organizations develop their leaders through VolEd. The Army's VolEd Program is an effective and valuable program; hence, the guiding principle throughout this literature review is to focus on exploring barriers to TA usage, not on restructuring the Army's VolEd Program.

Thus, the essence of this review is to discover and study knowledge that may enhance the U.S. Army's established VolEd Program while working to distinguish facts from myths or fallacies and to distinguish justified beliefs from opinions (epistemology). Other goals of this literature review are to show why the present study is needed (justification), to show how this research adds to previous research pertaining to adult participation in adult learning, and to show which theories had the most influence on the present study (Patton, 2002; Ton, 2012).

Literature Review Design Concept

The design concept for this literature review centers on the following three main topics: the U.S. Army leadership philosophy and soldiers' life cycle, the U.S. Army's leader development strategy, and the life factors affecting soldiers in reaching their educational goals through participation in lifelong learning methodology. According to Kouzes and Posner (2010), learning is a master skill, and the best leaders are the best learners. Wheatley (n.d.) added that the researchers are coming to understand

“leadership and learning are the tools we now need to develop high-performing organizations” (as cited in Harper & Sullivan, 1996, p. 44). The U.S. Army places the efforts “to enhance learning in Army classrooms, in the field, and through self-development” (DA, 2017c, p. iii).

Figure 1 illustrates the researcher’s mental model while framing and outlining the review of the literature organization. Figure 1 also highlights some vital concept connections and describes the researcher’s end-state goal for reviewing this frame of work, which is to gain insight to help the U.S. Army identify critical variables that play a vital role in preventing or delaying the RA soldiers in the rank of specialist from completing their degrees, as well as to elaborate on how the factors can have a positive and negative impact on the overall educational journey of the military student.

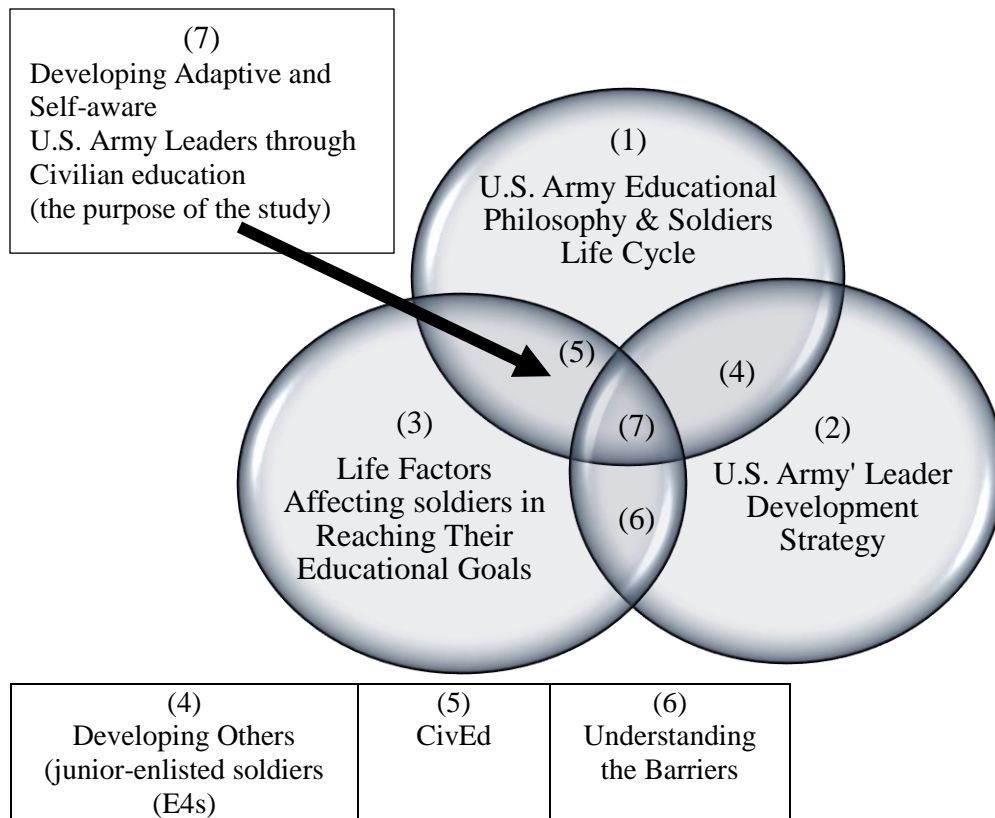


Figure 1. Literature review design concept. Adapted from “Emotional Intelligence and Leader Development: Measuring Trait Emotional Intelligence Scores of Mid-Career Commissioned U.S. Army Officers,” by Walters, 2018. Copyright 2018. Retrieved from ProQuest Dissertations & Theses Global (AAT 10826401).

Chapter II Overview

The initial section of the literature review focused on the main topics of the U.S. Army’s approach to educational philosophy and the soldiers’ journeys through their military careers. The objectives of the section titled *the U.S. Army Educational Philosophy, and Soldiers’ Life cycle* include the following: (1) to learn about some preconceptions, misconceptions, and other thinking challenges related to postsecondary education while outlining how the soldiers’ life cycle contributes to the bigger picture of achieving academic degrees or moving toward meeting the educational goals while serving in the RA; (2) to define the perplexing word and occurrence of adult learning,

connecting some of the most mainstream and relevant adult participation in adult learning theories with current U.S. Army doctrine; (3) to explore the most current U.S. Army's VolEd strategy and make connections with other leadership models; (4) review empirical dissertation research on military leadership and adult learning participation theories; (5) to outline and define the U.S. Army's VolEd opportunities while gaining insights about the educational benefits available to soldiers and how they contribute to a soldier's overall academic success in postsecondary education programs; and (6) to conclude with examining the concepts of developing others and self-development. Developing junior-enlisted RA soldiers, the largest U.S. Army population and the most underserved population regarding VolEd, is a natural bridge from this section's body of knowledge to the next section of reviewed literature entitled U.S. Army Leader Development Strategy.

The next section of this literature review focuses on the U.S. Army's leader development strategy within the organization, which relies on the domains of experience, training, and education. Specifically, this section emphasizes civilian educational opportunities. It is essential to highlight that the U.S. Army's VolEd Program's systems and mechanisms are much broader than the scope of this study. Hence, this section primarily focuses on only the Army TA available to U.S. Army soldiers. The U.S. Army is observing a decrease in the usage of TA despite studies confirming that the education benefits remain as the number one reason for joining the military. Considering the overarching purpose of this study, the researcher is confident the defined problem presents the reality that the U.S. Army needs a better understanding of barriers preventing junior-enlisted soldiers in the rank of specialist from completing their academic degrees

while on active duty from both the organizational and individual domain perspectives.

The bridge from the U.S. Army Leader Development Strategy section to the next section involves the exploration of factors affecting junior-enlisted soldiers in the RA, focusing specifically on junior-enlisted personnel in the rank of specialist participating in VolEd. This section defines military, social, personal, integration, support, and resource factors while outlining some challenges related to junior-enlisted soldiers in the study. The researcher identifies factors based on over 24 years of educational experience working with military personnel, paying particular attention to each element for sub-categories and their classifications. This section also explores and outlines the potential impact on a soldier's academic goals and commitment to degree completion to achieve the objectives of the present study.

The research design of this non-experimental, quantitative study is an exploratory, descriptive analysis of the pre-existing data accumulated from the U.S. Army's databases, including the enlisted military personnel database, the U.S. Army HRC Enlisted Military Personnel Database (eMILPO), and the ArmyU GoArmyEd data warehouse, TRADOC. The researcher had no control over the variables in the study, and the data were collected as is from the corresponding databases. According to Cates (1985), "the use of descriptive statistics allows describing the characteristics and performance of subjects concerning a set of variables of interest" (p. 147).

U.S. Army Educational Philosophy and Soldier's Life Cycle

The former Secretary of the Army, John McHugh, emphasized the importance of education:

We must continue to educate and develop soldiers and civilians to grow the intellectual capacity to understand the complex contemporary security environment to better lead Army, Joint, Interagency and Multinational task forces and teams. Therefore, we will reinvest and transform our institutional educational programs for officers and noncommissioned officers to prepare for the complex future security environment. (DA, 2015c, p. 4)

The adult learning principles successfully emerged from theory into a variety of disciplines to include military training (Cornell-d'Echert, Zacharakis, & Polson, 2012; Knowles et al., 2005). The following core principles comprise the following: (1) demonstration of self-directing behavior, (2) having a multitude of experiences to leverage, (3) integration of learning with daily activities, (4) desire for learning to help with problem solving, (5) the learner's need to know, and (6) experienced responses to external motivation but realizing learning is more effective when there is an internal motivation to learn (Knowles et al., 2005). "Embedded statements describe the importance of activating prior knowledge where learners apply new knowledge to solve real-world problems and integrate into everyday practice" (Cornell-d'Echert et al., 2012, p. 18).

"Today's Army has reaffirmed its values and sustained its readiness, but is guided by a new and much broader vision. It has a new doctrine and a new approach to modernization and implementing new concepts for training and for developing leaders" (Harper & Sullivan, 1996, pp. 20-21). "Education is supposed to leverage skills, enabling problem-solving, because the recipient has learned how to think. The military dedicated

significant resources to train and educate its personnel to perform their military functions” (Cornell-d’Echert et al., 2012, p. 19).

What is the DoD VolEd?

“VolEd is continuing, adult, or postsecondary education programs of study that service members are eligible to participate in during their off-duty time, and that is available to other members of the military community” (DD, 2014, p. 61). Program oversight for VolEd is the responsibility of the Undersecretary of Defense for Personnel and Readiness. VolEd originates from Title 10 U.S. Code, Sections 2005, 2006, and 2007, DoDI 1322.25, 2014; DoDI 1322.19, 2013; and DoD Directive 1322.08E, 2007 (Bilodeau, 2019; DA, 2019; Woods, 2019). The VolEd Program includes the following: (1) professional education counseling, (2) high school completion/diploma programs, (3) BSEP, (4) TA for postsecondary education degree and certificate programs, (5) CA, (6) college level examination program (CLEP) and DANTES subject standardized tests (DSST), (7) military evaluation program, and (8) joint services transcript (JST). As of June 2019, over 2,700 EIs participated in VolEd Programs through a signed DoD VolEd Partnership DoD MOU (DA, 2018b, 2019c).

All U.S. military branches are responsible for establishing, maintaining, operating, and implementing the VolEd Program at the education centers and offices on military installations, virtually or geographically throughout the world. According to Boeren (2016), “the content of lifelong learning activities should match the needs of the potential adult learner, but it is also vital that the activities are being offered at the convenient time and locations” (p. 98).

Education services personnel manage the Army education centers and offices, including education services officers (ESO), education services specialists (ESS), and education guidance counselors. In FY 2018, the DoD supported over 928,000 service members participating in off-duty VolEd opportunities. Woods (2019) reported that 1,210,000 counseling sessions were conducted in FY 2018, 247,000 service members enrolled in 712,000 college courses, 47,000 college degrees and nearly 600 certificates were earned by service members using TA, 37,000 service members registered for academic skills courses, 209,000 exams were administered, and 313,000 official transcripts were sent to EIs (Woods, 2019, slide 5).

How VolEd Impacts a Soldier's Life

To perform in the modern environment, service members need greater resilience and agility than ever before to prepare themselves for the future and its unknown challenges (Holbeche, 2015). Miller (2012) argued that “learning agility is gaining favor as a meaningful indicator of potential since it enables leaders to thrive in diverse, intense, and varied challenges” (as cited in Holbeche, 2015, p. 174). According to Bok (1986), “increasing competition from abroad—economic, political, and military—also raises society’s stake in maintaining a high quality of education” (p. 5).

The U.S. Army’s ranks are filled with soldiers who know and understand the importance of education. In FY 2017, the total number of soldiers with degrees was 280,118, which included 132,264 degrees held by enlisted soldiers and 147,854 by officers (Raymer, 2018, slide 6). This data show that VolEd had a tremendous impact on the readiness of all Army forces. Also, the analysis in the research conducted by ArmyU

and ACCESS revealed that the soldiers with TA-supported degrees have higher promotion rates than non-TA users.

Another critical argument regarding VolEd is that CivEd facilitates the transition from military to civilian life. According to ArmyU and ACCESS, in FY 2017 the unemployment compensation for ex-service members who completed 20 or more courses in GoArmyEd was 2%, while the rate for those who did not complete any courses while on active duty was 63% (Raymer, 2018, slides 8-10).

Change Is an Inside Job

Cloud (2013) stated that “the leader needs to learn and adapt to the changing environment all the time and then execute what they have learned” (p. 46). In August 2019, Ryan McCarthy, Undersecretary of the Army, issued a memorandum directing continued staff coordination to implement the fundamentals to align army education and CA programs optimally across the Army” (R. McCarthy, personal communication, August 15, 2019). The realignment intended to ensure the effectiveness and efficiency of these critical programs in order to meet the educational needs of soldiers for the duration of their military careers. That effort produced the total realignment of the U.S. Army HRC ACED with the U.S. Army TRADOC, ArmyU. “Developing a lethal, professional, and technically competent force requires an openness to new ideas and new ways of doing things in an increasingly complex world. We will change and adapt” (Milley, 2015).

While realignment was a significant change for ACED, it brought with it the appropriate partner in ArmyU that had historically collaborated with ACES throughout the years. “Regardless of the place of change, leaders can easily and naturally become

absorbed with just tasks of staying on top of operational progress and fixing problems” (Crossland, 2008, p. 46). “ArmyU recognizes the value of ACED, and together we will champion VolEd in towards the future, providing the best educational programs and services to soldiers” (Rambo, personal communication, September 16, 2019). Blanchard (2010) stated, “effective organizational leadership is more about managing the journey of change, than announcing the destination” (p. 197). As a part of the realignment, the ArmyU renamed ACED to ACCESS to incorporate and highlight the newest initiative represented in the CA program, also launched in January 2020 Army-wide. Drucker (2004) noted, “the most effective way to manage change successfully is to create it” (p. 69).

Further, Drucker (2004) added, “to make the future is highly risky. It is less risky, however, than not to try to make it” (p. 69). Change tends to be complicated and sometimes intimidating, but for the U.S. Army—change is always a constant. Rambo (2019) claimed that “The ArmyU, ACCESS purpose is to achieve cognitive dominance over the adversaries by synchronizing overarching VolEd processes while leveraging the Army’s existing schools and EIs to create the learning environment to produce agile, adaptive, and innovative soldiers” (personal correspondence, September 16, 2019). Salerno and Brock (2008) debated that “no matter the value or process employed to make the change, there will be unforeseen implementation issues and underlying dynamics created by the workplace environment and the organization’s communication style” (p. 7).

Bradberry and Greaves (2009) remarked:

Idea here is to prepare for change. This is not so much a guessing game where the leaders test the accuracy in anticipating what is next, but rather, it is thinking through the consequences of potential changes so that the leaders are not caught off guard if they surface. (p. 133)

Becoming champions of education and training is a noble cause and requires education personnel to remain open and flexible. An agile VoEd program is critical to the support provided to soldiers in the pursuit of their educational goals.

Evolving Change in Postsecondary Education

Change occurs not only in the U.S. Army, but also in postsecondary education.

Soares and Choitz (2019) argued:

Higher education is no stranger to changing times and the need to adapt and respond to shifting societal expectations and student demographics. Now, once again, the context of higher education is changing, ushering in an opportunity to reflect on how we structure postsecondary education learning opportunities and for whom. (p. ix)

The EIs need a change because the vision of a typical student is no longer straight out of the high school population (Cross, 1981; Hussar & Bailey, 2016; Lumina Foundation, 2019a; National Center for Education Statistics [NCES], 2019a, 2019b). Sixty-four percent of college students in the U.S. are working, 40% are employed full time, and 49% are financially independent of their parents. Six percent of all college students serve or have served in the U.S. Armed Forces (Lumina Foundation, 2019b).

This study’s focus is on military students. Figure 2 illustrates the education attainment of the population 18 years and over, by age in 2018.

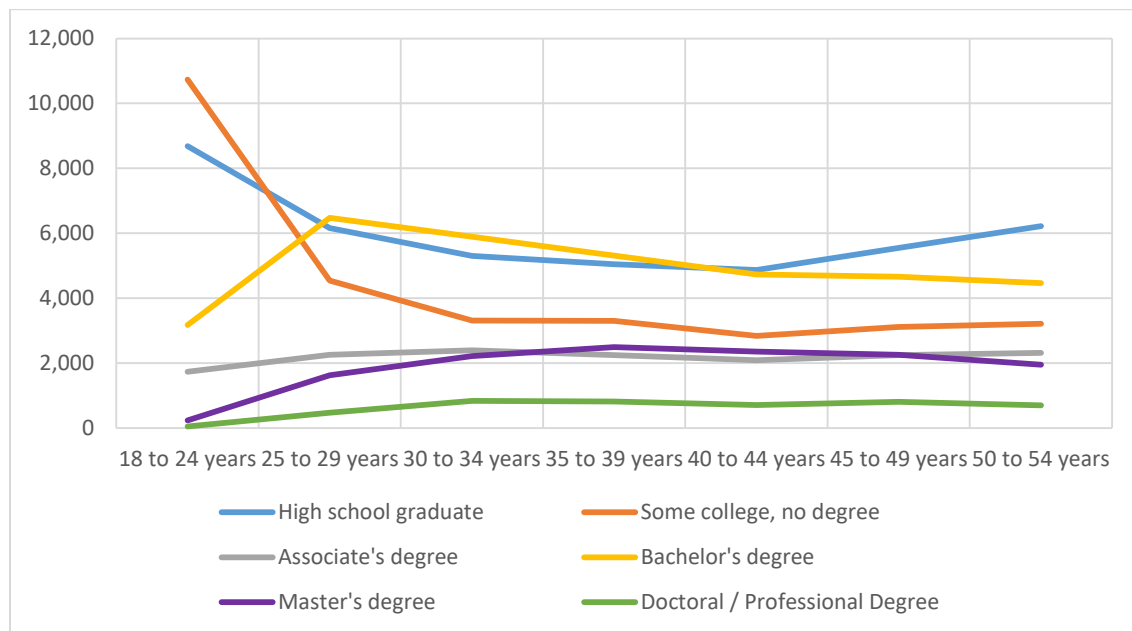


Figure 2. 2018 Educational attainment of the population 18 years and over, by age. Adapted from “Current Population Survey, 2018 Annual Social and Economic Supplement,” by U.S. Census Bureau. Copyright 2018.
Note: numbers in thousands.

The NCES reported the postsecondary degree attainment rates for both female and male ages 25 to 29 across all education levels increased between 2000 and 2018. During this period, attainment rates for those ages generally were higher for females than for males, and the difference between the rates widened at all attainment levels, except the high school or higher completion levels (NCES, 2019a, 2019b).

Postsecondary education is evolving, and the main focus has shifted to close the gap of the fundamental mismatch, as there is a mass of an underserved population. Soares and Choitz (2019) stated, “35 million adults in the U.S. have some credit but no degree, and at the high end, are twice the numbers who have not even attempted to pursue postsecondary education” (p. vii).

Historical Aspect of the U.S. Army VolEd

The U.S. Army and VolEd have had a long history dating back to the winter of 1777, just two years after the U.S. Army's birth in 1775, when the Continental Army chaplains offered literacy classes to troops at Valley Forge (Wild, 1938). "Unlike literacy efforts to follow, the initial reading programs were unrelated to improving the soldiers' abilities to carry out military roles but were focused primarily on improving their morale" (Persyn et al., 2012, p. 7). After World War I, the Army required technically trained soldiers capable of operating increasingly mechanized and technical military hardware (Persyn et al., 2012). Researchers in postsecondary education have settled on the fact that the World War II GI Bill, called the Servicemen's Act of 1944 (also commonly referred to as the "GI Bill of Rights"), was listed as a reason for the sizeable influx of veterans into college after World War II, which resulted in college enrollments and increased educational attainment across the population (Wilson, Smith, Lee, & Stevenson, 2013).

The U.S. Army has been a critical player in the development of overall postsecondary education in the country. One of the U.S. Army's most extensive contributions to the American education system was the creation of the General Education Development (GED) exam. This effort allowed soldiers in World War II who were unable to finish high school to complete a series of tests to gain a degree equivalent to a high school diploma, as several of these returning soldiers were in their mid-20s with no educational degree (Persyn et al., 2012). Historically, soldiers' literacy remained a consistent concern of the Army, which prompted the creation of new avenues to promote literacy skills development, ranging from the U.S. Armed Forces Institute

correspondence courses to the BSEP, created in 1979 and continuing to this day (Persyn et al., 2012).

During 2015, CAC established ArmyU, “where the stovepipes of the 86 schools inside the Army were broken down to increase the rate of innovation and foster partnerships outside the Army” (Hames, 2015, p. A-1), with the goal and purpose of focusing on developing adaptive leaders (Walters, 2018). The TRADOC remains the Army’s proponent for the training, education, and leader development process and is the accrediting authority for Army institutions conducting training and leader development (DA, 2015a). The most recent significant effort of the Army to improve training and education, in addition to the creation of the Army University in 2015, was the organizational realignment of duties and responsibilities between HRC and TRADOC in 2019, as well as the expansion of the Army-wide CA Program.

ACES Role in Soldiers’ Academic Pursuit

Eligible active duty soldiers are presented with an opportunity to further their education while serving the country. The military services employ over 390 Education Services Specialists (ESS) and 250 professional counselors worldwide to assist service members in reaching their educational goals (Bilodeau, 2019, slide 15). The Army education counselors advise soldiers on an individualized basis to select the best degrees and EIs to achieve their educational goals to become better soldiers and informed citizens.

The U.S. Army’s education personnel are the advocates for increased participation in the VolEd Program to improve readiness and promote education. An educated soldier supports the U.S. Army’s desire to develop adaptive, agile soldiers

capable of responding to multiple environments across the world. Agile soldiers make an agile Army. “If the workforce is skilled and motivated, supported by the right processes and technology, appropriate policies and practices, and effective management, it should generate high productivity” (Holbeche, 2015, p. 99). The TRADOC is the proponent for the U.S. Army VolEd. ArmyU, ACCESS is a policy proponent for AR 621-5 (DA, 2019c).

The DoD VolEd mission is to “shape quality educational experiences to foster better Service members, better citizens” (Woods, 2019, slide 6). The ACES promotes the DoD VolEd mission by “providing lifelong learning, readiness, and resilience through flexible and quality education programs, services, and systems in support of the total Army” (DA, 2019c, p. 5; DA, 2019k; GoArmyEd, n.d.).

The ACES plays an instrumental role in supporting soldiers in making well-informed and actionable educational decisions across the military life cycle to prepare them for near-term and long-term career progression and academic success. This program is directly related to retaining quality soldiers, enhancing career progression, increasing the combat readiness for the U.S. Army, and returning soldiers with relevant education and skill sets to civilian careers.

TA supports the army leader development strategy imperatives through: (1) commitment to the army profession, lifelong learning, and development; (2) balancing the U.S. Army’s commitment to training, education, and components of leader development; and (3) managing military and civilian talent to benefit the institution and individual (DA, 2019c). Institutional training, operational assignment, and education play a critical role in self-development on both the personal and professional levels.

VolEd pursuits help soldiers to elevate interests and boost the potential of opening doors and opportunities in their military career and beyond.

Tuition Assistance (TA) Benefits at a Glance

The U.S. Army focuses on human capital transformation across the organization and recognizes that education, while a sound investment, can be an economic challenge for many young people today. VolEd provides off-duty, educational opportunities for soldiers. According to recent studies conducted by the Lumina Foundation (2019b), EI tuition has increased 503% more than inflation over the past 35 years. In the 2019 calendar year, the average undergraduate student loan debt by institution type was \$26,900 (public), \$31,450 (non-profit), and \$39,900 for-profit (Lumina Foundation, 2019b).

“Values-based education and training must be an organizational priority supported by adequate time and resources” (Foley, 2014, p. 20). To help soldiers pursue their educational goals, the U.S. Army offers financial assistance for soldiers at every education level through master’s degrees. The DoD TA program provides service members with an opportunity to enhance their academic achievement (i.e., earn a postsecondary certificate or degree) during their off-duty time, which improves job performance, promotion potential, self-development, and personal quality of life. By statute, TA can be used for only courses leading to a credential that is offered through an accredited institution of higher learning (DA, 2019c). TA benefits with a cap up to \$4000 per FY are available for the traditional classroom, distance learning, and blended format leading to certificates, associate’s, bachelor’s, and master’s degrees. EIs that offer

degrees to soldiers are regionally and nationally accredited by an accrediting agency recognized by the U.S. DoEd (DA, 2019c; GoArmyEd, 2019).

The TA program is managed through GoArmyEd, a one-stop virtual portal for managing college education and using TA benefits. Through GoArmyEd, Army TA is available to commissioned officers, warrant officers, and enlisted soldiers in the RA, ARNG, and the USAR. GoArmyEd combines soldiers' TA requests and registration for classes into one automated process anytime and anywhere via the Internet, tracks soldiers' participation, and allows soldiers to communicate with Army education professionals and college personnel to obtain assistance with achieving their educational goals (DA, 2013b, 2018b, 2019c; GoArmyEd, 2019).

On the date of the data pull for this study, GoArmyEd connected soldiers with 2,500+ accredited EIs worldwide and provided an opportunity to choose from over 1,000+ available degree plans. According to GoArmyEd, 128,170 soldiers currently are using TA in meeting their educational goals (GoArmyEd, 2019).

Expanding Capabilities: Credentialing Assistance Program

A *certification* is an occupational credential awarded by a certification body—such as a professional association or certifying board—based on an individual demonstrating through an examination process that he or she has acquired the designated knowledge, skills, and abilities to perform a particular job (NCES, 2019c). A *license* is an occupational credential awarded by a government agency that constitutes legal authority to do a specific job (NCES, 2019c). *Work experience programs* include internships, co-ops, practicums, clerkships, externships, residencies, clinical experiences, apprenticeships, and similar programs (NCES, 2019c). In 2016, some 6% of non-

institutionalized individuals ages 16 to 65 who were not enrolled in high school reported having a certification, 18% reported having a license, and 21% reported having completed a work experience program (NCES, 2018; U.S. DoEd, 2019).

The NCES reported that “people with career and technical education are more likely to be employed than their counterparts with academic credentials” (Krupnick, 2017). Because of GoArmyEd limitations, the data for credentialing certificates and licensures were unavailable in the study’s dataset, and further analysis was not possible. Figure 3 shows the percentage of 16-to-65 year-olds who have work credentials or have completed a work experience program, by the highest level of education.

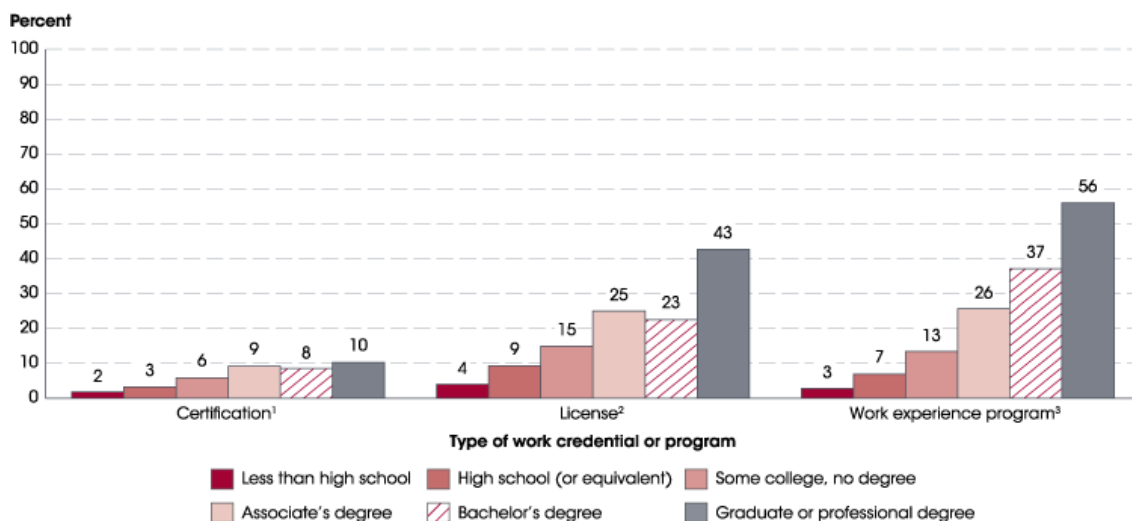


Figure 3. Percentage of 16-to-65-year-olds who have work credentials or have completed a work experience program, by the highest level of education. Adapted from “The Condition of Education 2018 (NCES, 2018-144), Non-degree Work Credentials, and Work Experience Programs,” by U.S. DoEd. Copyright 2018 by NCES.

As shown in Figure 3, in 2016, the percentages of 16- to 65-year-olds with certifications, with licenses, and who had completed work experience programs were higher for those with a college degree than for those without a college degree. Some 43% of adults with a graduate or professional degree, 23% with a bachelor’s degree, and 25% with an associate’s degree reported having a license, compared with 15% of those

with some college but no degree and 9% of those who completed high school or a GED. Similarly, the percentage of adults who reported having a certification was higher for those with a graduate or professional degree (10%), a bachelor's degree (8%), and an associate's degree (9%) than for those with some college but no degree (6%), high school completion or GED (3%). The percentage of adults who reported they had completed a work experience program was highest for those with a graduate or professional degree (56%), followed by those with a bachelor's degree (37%), an associate's degree (26%), some college but no degree (13%), and high school completion or equivalency (7%) (NCES, 2019c).

Besides TA benefits, the Army also provides funding under its CA program, which is accessible to soldiers who otherwise qualify for TA funding. The Army CA program provides funds to pay for courses and exams that lead to industry-recognized academic or vocational credentials in an occupational area of the soldier's choice. The CA Program allows soldiers to enhance their technical skills, either in their current MOS or in an occupation they would like to pursue when they leave military service. Soldiers can request CA funding for any credential listed in the Army Credentialing Opportunities On-line (COOL, n.d.).

“The Army could add to its record retention numbers by providing more incentives to stay on duty and also expect this is going to be a tool to help us recruit and retain talent” (Lacdan, 2019, p. 1). The CA policy expanded the Army VolEd benefits to include funding for courses, books, and fees, leading to over 1,600 industry-recognized credentials available on the Army COOL website (COOL, n.d.).

The CA Program has the same annual funding ceiling—up to \$4,000 per FY. Soldiers may use both TA and CA; however, the combined use by any soldier may not exceed the FY funding limits.

Soldiers' Available Educational Benefits

Gleiman and Zacharakis (2016) noted soldiers participate in formalized VolEd and informal learning opportunities throughout their careers to broaden their knowledge, improve performance and analytical skills, and to be operationally ready for combat at all times. The Army provides TA to eligible officers, warrant officers, and those enlisted in the active duty component, ARNG and USAR. Through its many programs, ACES “promotes lifelong learning opportunities and sharpens the competitive edge of the Army” worldwide (GoArmyEd.com, n.d.). The purpose of ACES is to assist soldiers in making decisions regarding the pursuit of VolEd postsecondary education. Army education counselors are available to assist soldiers in making informed decisions and guiding them toward reaching their educational goals at the local education center, via email, or online.

In FY 2018, the DoD VolEd conducted over 1.2 million professional counseling sessions to help service members explore postsecondary education options, discuss benefits, and consider financing (Woods, 2019, slide 5). Postsecondary education program funding options include TA, CA, grants, scholarships, student loans, GI Bill, and other resources. As soldiers require academic guidance, education centers provide support with various levels of military training.

Soldiers establish an education path aligned with their military occupational path and then have their credentials applied to their academic evaluation. However, it is also

common for soldiers to be interested in the exploration of fields of study not related to their military occupation.

Understanding Degree Pursuit in a Soldier's Life Cycle

The Army is a learning organization. The U.S. Army's vision is to immerse soldiers "in a progressive, continuous, learner-centric, competency-based learning environment from their first day of service" (DA, 2017c, p. iii).

The initial concept for the military life cycle transition model centers on paralleling career readiness with career progression. Soldiers must be engaged throughout their military careers in mapping and refining their individual development plans to achieve their military goals and their post-military goals for employment, education, career technical training, entrepreneurship. (DA, 2018b, p. 21)

The soldier's military career can be divided into three phases: initial, career, and transition. Army experience is a repetitive process of deciding particular paths to pursue personally and professionally at each stage of a soldier's life cycle (DA, 2018b). Soldiers undergo eight functions in each phase of the life cycle. A soldier's career progression is defined as a deliberate, continuous, life cycle. Figure 4 further illustrates the steps that soldiers encounter in each stage of the sequential, and progressive process" (DA, 2018b, p. 22).

Each step of a soldier's career development timeline plays a vital role in a soldier's personal and professional development, provides stepping stones for reaching their educational goals while serving the nation, and builds a foundation for the successful transition to the civilian sector. "At each level, soldiers learn the skills and demonstrate the potential for advancement to the next higher rank" (DA, 2018b, p. 23).

Boeren (2016) asserted that change tasks undertaken by adults, such as “choosing and preparing for a career during late adolescence and youth versus preparing for retirement during the adult transition is likely to result in different adult life learning participation patterns” (p. 78).

According to Levinson’s Eras in the Male Life Cycle theory, shown in Figure 5, the U.S. Army soldiers serving in the rank of specialist are undergoing the early adulthood transition phase because the entire population falls into the 18-45 years age bracket. Levinson’s Seasons of Life Theory in Adulthood includes early transition (17-22 years old), entering the adult world (22-28 years), age 30 transitions (28-33 years), settling down (33-40 years), mid-life transition (40-45 years), entering middle adulthood (45-50 years), age 50 transition (50-55 years), ending middle adulthood (55-60 years), and late adult transition (60-65 years) (Boeren, 2016).

According to Cross (1981), what “motives to participate in learning activities differs for different groups of learners, at different stages of life, and most individuals have not one but multiple reasons for learning” (p. 97). Levinson’s life events model explains an impact on a soldier’s commitment to learning. Levinson (1978) claimed that an individual in the early adulthood stage has the personal drives and societal requirements that “powerfully intermesh at times, reinforcing each other and at times having stark contradiction” (p. 23). According to Cross, the barriers preventing participation are dispositional and situational (Boeren 2016; Cross, 1981).

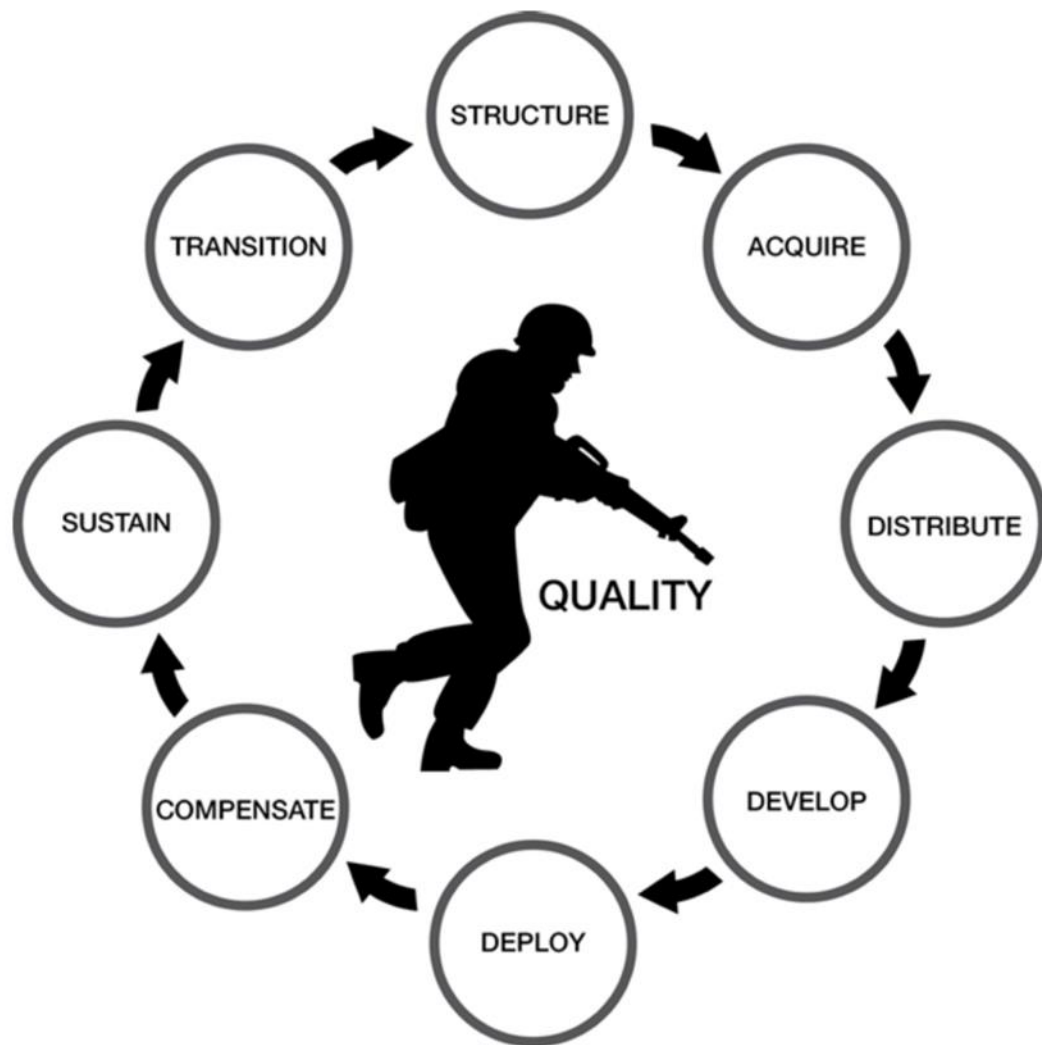


Figure 4. The U.S. Army's transition soldier life cycle model. Adapted from U.S. Army Noncommissioned Officer Professional Development Guide (PAM 600-25). Copyright 2018b by Department of the Army. Retrieved from https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN13774_DAPam600-25_FINAL.pdf

Initial phase of a soldier's educational path. The early adult transition begins at age 17 and ends at 22. The “various kinds of separation, ending, and transformation” occurs in this phase as a young adult joins the Army. Another characteristic of this phase is “the exploration of possibilities of the adult world (military) and transformation” (Levinson, 1978, p. 56). During a soldier's educational pursuit in the initial stage,

soldiers have presented what the U.S. Army requires for successful job performance and any other self-directed training. The initial phase is almost entirely the structured self-development phase described in the Army leader development pamphlet (DA, 2015b). This mandatory phase includes basic training and AIT. The U.S. Army advanced individual training (AIT) is required in the initial stages of a soldier's education pursuit, which is when soldiers learn the ins and outs of their new jobs in depth. This phase typically lasts over a year.

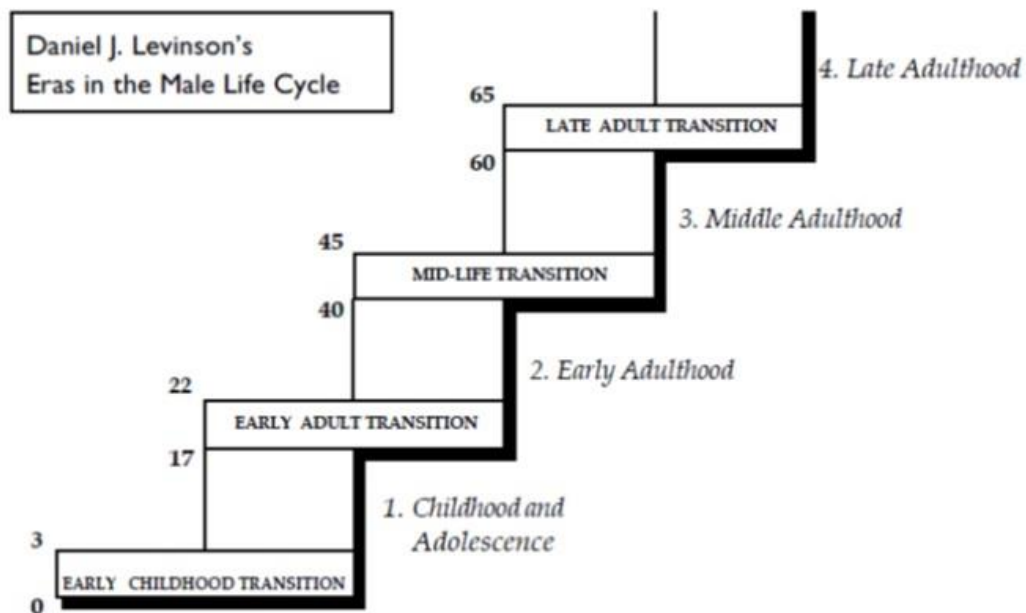


Figure 5. Levinson's Model of Eras in the male life cycle. Adapted from "The Season of a Man's Life," by D. J. Levinson, 1978, p. 20. Copyright 1978 by Ballantine Books.

When participating with VolEd, soldiers are encouraged to explore the self-directed opportunities by using the GoArmyEd tool called VIA. GoArmyEd offers a voluntary decision tool that helps soldiers research and choose a long-term civilian career goal, a degree that prepares them to attain the goal, and an EI that offers the best program and the best value to pursue the degree. Soldiers do not have to be eligible for TA to use

the decision support tool but must establish a GoArmyEd account to access it (DA, 2019c). The VIA is a career, degree, and school decision support tool designed to help soldiers make informed decisions and advises them on what steps they should take to obtain the degree or specific training certification.

Second phase of a soldier's educational path. Most soldiers in this phase are 22 to 40 years old, which represents Levinson's model of entering the adult world and age 30 transition. Entering the adult world life period is characterized by shifting the center of gravity of soldiers' lives, finding the balance in exploring the complex military world, and building the new insight world within. This is the stage when soldiers' "lives have an extremely transient, rootless quality" (Levinson, 1978, p. 58).

In this stage, "danger of committing oneself prematurely to a structure, without sufficient exploration of alternatives," may occur (Levinson, 1978, p. 58). This is true about career choices or personal relationships. If soldiers re-enlist, they transition to the next Levinson phase, called the age 30 transition, and "enhance their lives by building directly upon the past and do not make fundamental changes. It is time to reform, not revolution" (1978, p. 58).

This phase is most likely signified by a change in duty stations, which could cause a change in primary EI. According to current Army policy, "soldiers should establish a lifelong learning plan to support professional and personal goals by the 18th month of service" (DA, 2019c, p. 7). In an optimized scenario, during this phase soldiers transfer credits from prior learning, establish the degree plans, and complete several EI courses. Finally, soldiers receive an official evaluation from their college or university and can pursue a certificate or technical credential rather than an academic degree. The U.S.

Army suggests that soldiers begin postsecondary studies during the first five years of enlistment (DA, 2019c).

Also, soldiers “should earn an associate’s degree from an accredited EI or complete an education goal between the 5th and 15th year” (DA, 2019c, p. 7). A soldier’s military career requires them to be mobile and frequently move to various duty stations worldwide. In the past, completion of degrees and reaching educational goals were challenging since the academic programs were usually available only in a face-to-face format. On average, soldiers undergo a permanent change of station (PCS) every two to three years. Due to PCSs, soldiers had opportunities to take classes; however, they did not have a chance to complete their degree.

As a result, it was common for soldiers to possess several academic transcripts from multiple universities and a significant number of credits. Soldiers were forced to initiate the college enrollment process at each new duty assignment, and academic progress was often stalled. In the modern world with rapid technological advances, soldiers can complete their degree from the college or university of their choice since online degrees are now broadly available. Also, soldiers have the convenience of being able to expedite the degree completion process by possibly receiving college credits for completion of military training and experience based on a MOS in the desired academic path.

The Joint Services Transcript (JST) is an official document that equates military experience and training to college credit based on MOS and the desired educational path. The use of the JST by soldiers results in a reduction in tuition costs and degree completion time. The JST gives a synopsis of a soldier’s academic and military training

and converts this into potential college credits awarded by the soldier's chosen college or university (ACE, 2019; JST, n.d.).

Each EI determines whether to accept or reject the ACE's recommended college credits for the soldier's degree plan. Another way to receive college credit is to complete the College Level Examination Program (CLEP) and the Defense Activity for Non-Traditional Education Support (DANTES) subject standardized tests (DSST) exams (CLEP, n.d.). The initial career stage is focused on a soldier's exposure to educational opportunities, learning about their interests, and creation of the ultimate degree path with assistance from an Army education center or office education counselors. The second phase of a soldier's educational path typically spans several years.

Transition phase of a soldier's educational path. In this period, soldiers have a significant task: to establish a niche in society and anchor their lives more firmly, develop competence in a chosen craft, and become a valued member of a valued world (Levinson, 1978). The final phase, the transition phase of the education process, can last several duty stations or when the soldier transitions out of the military into civilian life. This phase is characterized by the finalization of the soldier's degree path and completion of certification and credentialing based on individualized interests and goals. In the transition phase, soldiers are presented with potential benefits, which include a promotion, new career opportunities, and financial incentives. First, the academic achievements could directly influence promotion opportunities a soldier receives. Second, the degree pursuits expand post-service opportunities by making soldiers more marketable job candidates.

Soldiers' Reasons to Pursue VolEd Opportunities

Boeren (2016) stated there are two significant reasons why participation in VolEd is perceived by society as necessary. The first reason is because there is a need to survive in a knowledge-based economy in order to remain competitive in a global market. The second reason is “that adults need to live together, and society will be a better place to live if there is a higher level of social cohesion and a strong sense of active citizenship” (p. 12). According to Phillips (2000), the DoEd estimates at least 75% of all jobs require some postsecondary education programs or specialized training. Laal and Salamati (2012) argued that through adult participation, both the individual and society can profit in two ways: (1) “participation and the generation of new skills knowledge are likely to benefit in monetary benefits,” for both the individual and the organization, and (2) “higher levels of well-being and happiness for the individual, and more successful organization” (as cited in Boeren, 2016, p. 15).

There are various reasons for soldiers to pursue lifelong learning through VolEd while serving in the military. The most imperative are the following: (1) promotion opportunities, (2) successful transition to the civilian world, and (3) an opportunity to deepen the knowledge in a specific area of interest. “Soldiers must develop muscle memory for physical tasks such that they can perform many of them automatically, but they must also develop brain-thinking abilities for the execution of jobs that require problem-solving and decision-making abilities” (Raymer, n.d., p. 1). “One of the new realities of 21st century warfare is that everyone must think; preparation should offer military personnel of all ranks opportunity to practice thinking” (Cornell-d’Echert et al., 2012, p. 21). Casey (2009) noted the “senior military leader in the U.S. realizes that

success depends on military personnel who can think critically, solve problems, take the initiative, be comfortable with ambiguity, and operate in a decentralized manner” (as cited in Cornell-d’Echert et al., 2012, p. 18). According to Bok (1986), non-traditional students pursue educational opportunities primarily for the following reasons or purposes: (1) to get a foretaste of college, (2) to test their interest in a particular vocation, (3) to explore some subject for cultural reasons, and (4) to prepare for retirement. Cross (1981) stated, “the pursuit of degrees is strongly associated with the level of educational attainment and with desire for job advancement” (p. 92).

U.S. Army Educational Philosophy and Soldiers’ Life Cycle Section Summary

Many of the young men and women who join the military are looking for a better life and an opportunity to serve the US. Paramount to their success is achieving their educational goals during their time on active duty. Some soldiers have earned college credit or other credentials before entering active duty. Others, with support of the U.S. Army, are using TA benefits to meet their academic goals, but various obstacles still exist for soldiers to use their benefits fully once they are on active duty. Gilmore (2009) and Lankford (2009) maintained that “although the military regularly provides a multitude of military-specific learning opportunities to meet the needs of service members, the institutions also show a commitment to service members’ college education” (as cited in Wilson et al., 2012, p. 65). Many EIs recognize the mismatch and work tirelessly in creating “the genuinely learner-centered in a way that honors and respects students’ experiences and passions for what they want to do in life” (Soares & Choitz, 2019, p. vii).

Shea, Fishback, Zacharakis, and Polson (2012) claimed “Education is especially important in the Army, based not only on its size compared to the other services but also

on the premium it places on leadership skills and training soldiers” (p. 54). Even though many programs and services are available to support soldiers in their academic journey, this support does not align with their current situation or is not designed in a way that benefits them beyond the resettlement program. Consequently, soldiers complete the classes but do not complete their degrees. “As a result of this fundamental mismatch, there is a mass of underserved adults” (Soares & Choitz, 2019, p. vii).

The lack of completion of the academic degrees does not appear to be a matter of unwillingness by organizations that are providing services to make a difference, but it appears to be a lack of awareness, workforce, resources, and time. According to the Lumina Foundation (2019b), the postsecondary education attainment rate for adults is 40%. “The challenge in postsecondary education programs is real and lies in the fundamental mismatch in postsecondary education between the historical structures of the institutions and today’s students” (Soares & Choitz, 2019, p. vii). Army students are the non-traditional students who work full time, possibly with children, or are supporting other dependents. Understanding their needs and matching their learning needs and life schedules allows for a fresh approach to adult learning and re-envision of EIs.

Blanchard (2010) argued that “leadership is the capacity to influence others by unleashing their power and potential to impact the greater good” (p. xvi). The Army ranks are filled with soldiers who know and understand the importance of education. In FY 2017, the total number of soldiers of all ranks with degrees in the RA, USAR, and ARNG was 280,118, which included 132,264 degrees held by the enlisted and 147,854 held by officers (Raymer, 2018, slide 6). This data show an enormous impact of VolEd on the readiness of all Army forces. Also, the analysis showed in the research conducted

by ArmyU, ACCESS, that the soldiers with TA-supported degrees have higher promotion rates than non-TA users. Another critical argument regarding VolEd is that it facilitates the transition to civilian occupations. According to ACCESS, in FY 2017 the unemployment compensation for ex-service members who completed 20 or more courses in GoArmyEd was 2%; for those who did not participate in the TA program while on active duty, it was 63% (Raymer, 2018, slides 8-10).

The DoD VolEd Program is an integral component of the readiness of all Army forces achieved through education and training. The DoD VolEd vision involves “shaping quality VolEd experiences to foster better service members, better citizens” (Woods, 2019, slide 2). The mission is to “champion policies, programs, and partnerships that enable access to quality postsecondary education opportunities, empower informed service member decision-making, shape meaningful personal and professional pathways, and drive military student success in postsecondary education programs” (Woods, 2019, slide 2).

The Army VolEd program aims to increase the readiness of all Army forces and maximize educational opportunities for soldiers. Kouzes and Posner (2010) stated that “the best leaders are the best learners” (p. xxiv). General Omar Bradley noted:

In any career or profession, a man’s value is multiplied by his education. Schooling assures the good soldier a better chance to get ahead. It helps a man win a promotion, receive more pay, and advance in their knowledge of their vocation. A better-educated soldier is a better soldier...more useful to his country and more useful to himself. (as cited in Mazarella, 2013, p. 20)

U.S. Army Leader Development Strategy

This section summarizes the U.S. Army leader development strategy, reviews the Army's leader requirements and the Army leader development models, and elaborates on the U.S. Army's approach to self-development, to include self-awareness and blind spots. The U.S. Army, as a leading organization, has the power to create "positive leadership cultures where potential leaders flourish" (Maxwell, 2005, p. 297).

A peacetime Army can perform its functions adequately with good administration and good management, as long as there is some sound leadership at the very top. During the war, an Army still needs competent administration and management up and down the managerial hierarchy, but it cannot function without lots of good leadership at virtually all levels. (Kotter, 1988, p. 9)

Rumsfeld (2013) argued:

the U.S. military is keeping with a culture that promotes independent thinking and individual judgment at multiple levels of command; it develops responsibility to the lowest level of authority possible. Junior officers and enlisted personnel in their 20s are regularly entrusted with life-and-death decisions as well as with equipment worth millions of dollars. (p. 222)

"Leader development is a process that aligns, training, education, and experience to prepare leaders who are not only prepared for their current position who are also preparing them for their progressive responsibilities as well" (DA, 2018b, p. 2). Based on the needs of the Army, the U.S. Army developed the Army leadership requirements model (DA, 2019b). This "model distinguishes core competencies and attributes for the Army and lines them up with the expectations and capabilities required for all Army

leaders regardless of rank, grade, uniform, or attire” (DA, 2018b, p. 3). Figure 6 illustrates the U.S. Army’s Leadership Requirement Model. “Be” and “Know” in the model represents what a leader is. “Do”—what a leader does. “Leaders who gain expertise through operational assignments, institutional learning, and self-development will be versatile enough to adapt to most situations and grow into greater responsibilities” (DA, 2019b, p. 1-15).

The U.S. Army Leader Development Model

Educated and well-trained soldiers are essential to maintaining a strong and resilient Army and are directly linked to increased Army readiness. Maxwell (2005) indicated the “organization will not function without strong leaders in every department or division” (p. 273). Furthermore, he proposed that “it needs 360-degree leaders at every level to be well-led” (p. 273).

As a standard leadership model for the army, the Leadership Requirements Model aligns expectations with leader development activities and personnel management practices and systems (DA, 2019b). According to Maxwell (1995), “the growth and development of people is the highest calling of leadership” (p. 111). Leader development is achieved through the lifelong synthesis of the knowledge, skills, and experiences gained through the developmental domains of institutional training and education, operational assignments, and self-development (DA, 2015b, 2018b, 2019b; Harper & Sullivan, 1996).

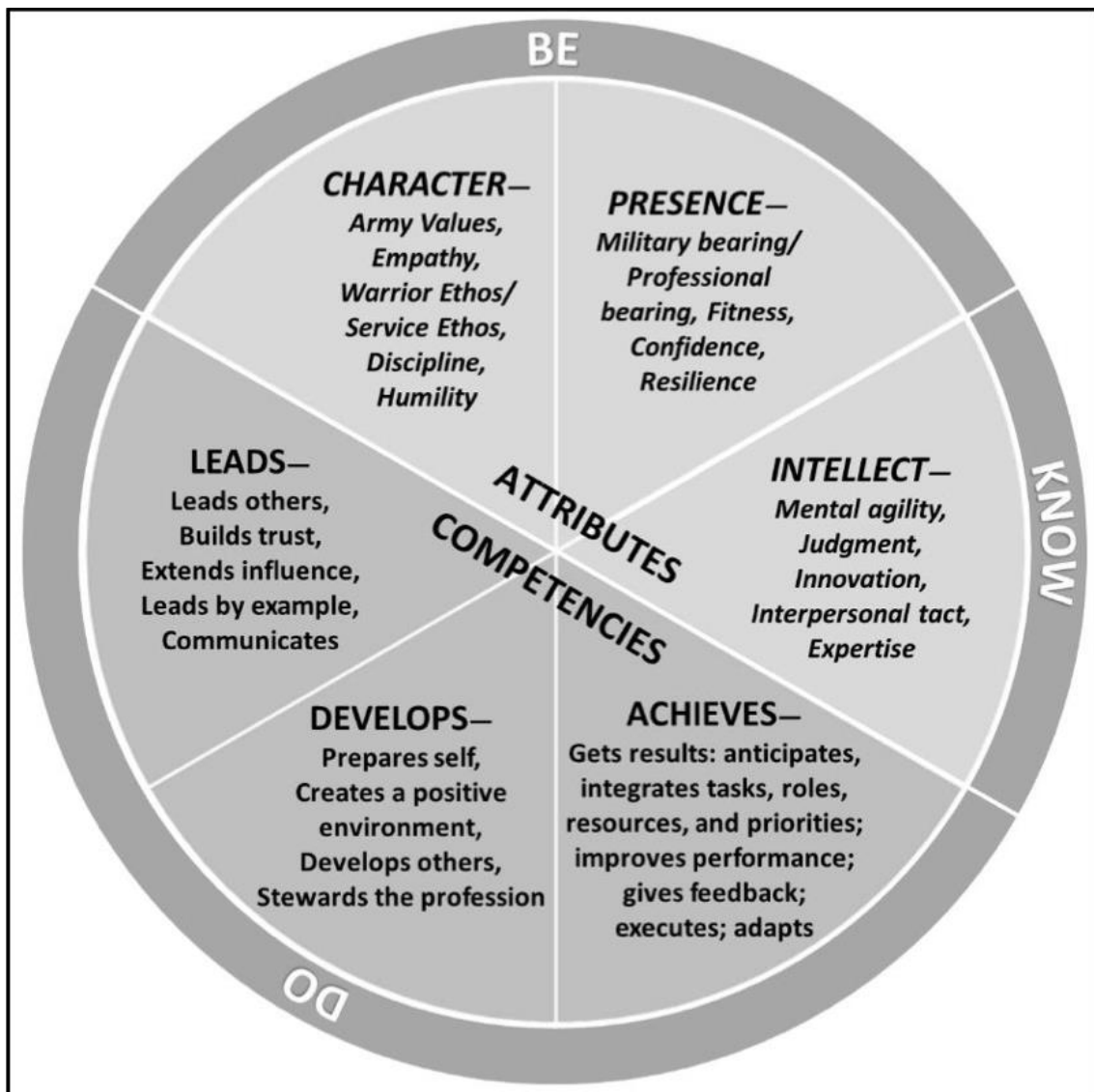


Figure 6. The U.S. Army's Leadership Requirements Model. Adapted from ADP 6-22: "Army Leadership and the Profession," pp. 1-15. Copyright 2019b by Department of the Army. Retrieved from https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN18529_ADAP%206-22%20FINAL%20WEB.pdf

The Army's Leader Development Model illustrates how the U.S. Army's capstone concept serves as the foundation for the organization's leader development philosophy. "The Army depends upon itself to develop adaptable leaders able to achieve mission accomplishment in dynamic, unstable, and complex environments...the best development occurs when it is individualized" (DA, 2015b, p. 1-1). Maxwell (1995)

noted, “Organizational growth potential is directly related to its personnel potential”

(p. 4). Figure 7 illustrates the U.S. Army’s Leader Development Model.

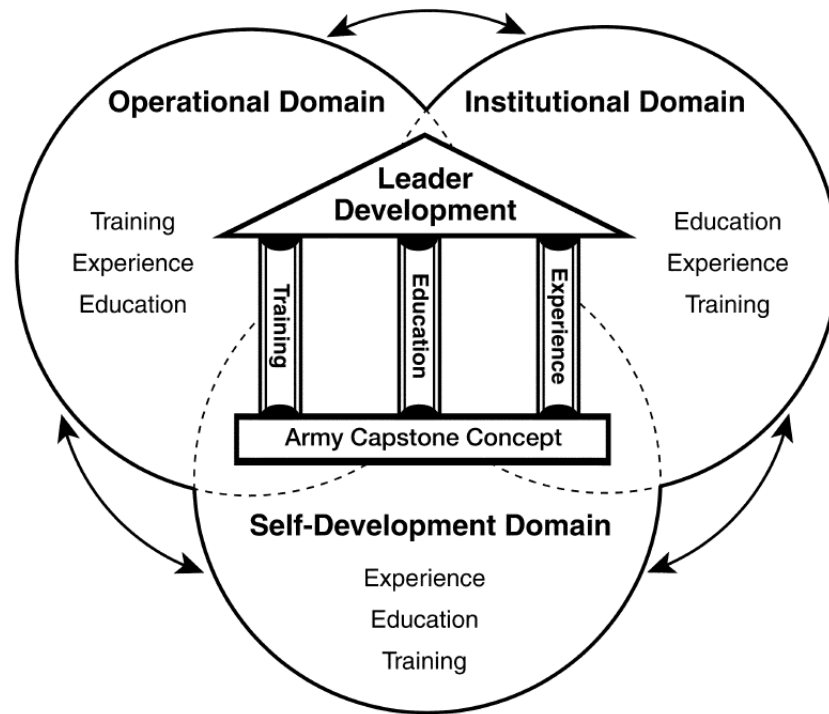


Figure 7. The U.S. Army’s Leader Development Model. Adapted from PAM 350-58: “Army Leader Development Program,” p. 2. Copyright 2013 by Department of the Army. Retrieved from https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=73048

Crossland (2008) argued that the rise of leadership development as a necessary competence for the organization is encouraging. Maxwell (1988) believed “knowledge alone will not make someone a leader, but without it, he cannot become one” (p. 50). “The Army has transformed itself into a learning organization—maybe the foremost learning organization in the U.S.” (Harper & Sullivan, 1996. p. ix).

U.S. Army Self-Development Approach

Self-development domain: The U.S. Army focuses on developing agile, adaptive, and innovative leaders through education, training, and experience who “act with

boldness and initiative in dynamic, complex situations to execute missions” (DA, 2015b, p. 1). Even though the institutional and operational domains are the foundation of the U.S. Army leader development, most leaders recognize the critical importance of the self-development domain and emphasize its value. “Self-development enhances, and expands the knowledge, skills, and abilities from assignments and institutional learning” (DA, 2017b, p. 5). Furthermore, Thomas (2006) asserted:

the institutional and operational domains are well structured, well defined in doctrine, and well implemented. However, they do not offer enough to allow the leader to realize his full potential. Only by actively seeking self-development can a leader achieve his optimum potential. (p. 109)

“Through self-development comes the confidence needed to lead. Self-confidence is an awareness of and faith in a person’s powers. These powers become clear and strong only as the individuals work to identify them and develop them” (Kouzes & Posner, 1995, p. 336). Harper & Sullivan (1996) claimed “leader development is a shared responsibility by the organization and the individual” (p. 215). Leadership is a choice; therefore, leaders are not born, nor are they made—they are self-made (Drucker, 1990; Kouzes & Posner, 2010; Kotter, 1996).

There are three types of self-development described in the U.S. Army’s self-development domain of the leader development model. Those types are as follows: (1) structured self-development, in which the U.S. Army soldiers capitalize on learning both in the classroom and on the job throughout their career; (2) guided self-development, presented through learning that the soldiers undertake and coordinate to gain skills and techniques not directly related to their MOS; and (3) personal self-development, in which

soldiers define the objective, pace, and process in pursuing VolEd opportunities, including advanced degree programs (DA, 2013b, 2017b).

The structured self-development program intends to bridge the gap between operational and institutional domains and set conditions for continuous learning and self-improvement. The effectiveness of this process results directly from the total integration of the three pillars of development: military training and education, training in units, and self-development. (DA, 2013b, p. 11)

As soldiers progress through their careers, institutional training, operational assignment, and education become critical components in their self-development (DA, 2017b). According to the U.S. Army, self-development is “a planned, dimension-based, progressive, and sequential process the individual leader uses to improve performance and achieve developmental goals” (DA, 2013b, p. 23).

“The ACES programs and services support the self-development domain of the Army leader development tenets by providing soldiers opportunities for traditional and technology-based education, and support for personal and professional career goals” (DA, 2019c, p. 7). The ACES programs assist soldiers in achieving the lifelong synthesis of the knowledge, skills, and experiences required for success (DA, 2017a, 2019c). The ACES is directly involved with the third pillar of the personal self-development by serving as a proponent for TA, CA, GoArmyEd, academic counseling, Army personnel and academic testing, BSEP, and other educational programs available to soldiers. Any variation in ACES VolEd offerings and modifications can positively or negatively affect a soldier’s decision regarding pursuing VolEd opportunities.

Self-leadership: Mainz (2015) noted that “self-leadership practices and concerns relate to higher-level governing standards that reflect personal authenticity, responsibility, and expanded capacity” (p. 133). Further, “success is within reach of just everyone; however, personal success without leadership ability brings only limited effectiveness” (Maxwell, 1998, pp. 5-6). Kotter (1998) added that “leadership, with a small ‘l’ is of incredible importance in today’s world” (p. 124). Furthermore, Kotter (1988) believed if leaders could get more soldiers to think of leadership in the small “l” sense, and not just in the larger-than-life capital “L” sense, this would force a reevaluation of the current practices shaping the organization in raising their leaders. Maxwell (2014) trusted that “leadership decisions should always be made at the lowest possible level” (p. 217). “Leadership is not preordained. It is not a gene, and it is not a trait” (Kouzes & Posner, 2010, p. 120).

Further, “higher-level self-leadership is represented by the metaphor of a self-leadership high road” (Kouzes & Posner, 2010, p. 134). “Organizations are not more effective because they have better people. They have better people because they motivate to self-development through their standards, through their habits, through their climate” (Drucker, 2006, p. 170). “An organization filled with self-leaders is an organization with an empowered workforce” (Blanchard, 2010, p. 93). Furthermore, Kouzes and Posner (2017) argued that “becoming the best leader, you can become the best self you can be. Therefore, leadership development is fundamentally self-development” (p. 308).

Self-leadership and lifelong learning: The vital component of Army leadership involves lifelong learning. Kouzes and Posner (2010) debated that leadership can be learned because it is an observable pattern of practices and behaviors, and a definable set

of skills and abilities. “Lifelong learners take risks. Much more than others, these men and women push themselves out of their comfort zones and try new ideas” (Kotter, 1996, p. 182). Leaders should work to improve themselves and those they lead. By learning new ideas or techniques, the individual, unit, or organization can be more effective and efficient. Leadership is a people business; however, everyone is born with capacities. Some skills and personality traits, like intuition or better-developed public speaking skills, are helpful and instrumental in the leader’s development journey. Leadership is an environmentally acquired skill.

Leadership is an observable pattern of practices and behaviors and a definable set of skills and abilities. Any skill can be learned, strengthened, honed, and enhanced given the motivation and desire, along with the practice, feedback, role models, and coaching. (Kouzes & Posner, 2017, p. 302)

Maxwell (1988) reiterated the old saying: “Champions do not become champions in the ring—they are merely recognized there” (p. 28). The daily routine develops champions. This applies to leadership development because it is all about daily preparation.

Self-Awareness

The U.S. Army defines the self-development training domain as “planned, goal-oriented learning that reinforces and expands the depth and breadth of an individual’s knowledge base, self-awareness, and situational awareness” (DA, 2013a, p. 11, 2017c, 2019f). Leadership starts with the individual. As a leader, a soldier must have an honest understanding of who they are and what they can and cannot do. Maxwell (1998) debated that “good leaders develop the ability to read themselves: their strengths, skills,

weaknesses, and current state of mind” (p. 83). “Leaders should know their strengths and weaknesses: what they do or do not know, what they are or are not skilled at, and what is in their span of control” (DA, 2019, pp. 1-8, 6-7, 108). To lead others, the leaders need to understand the existence of blind spots and first lead themselves successfully.

Covey (1990) asserted that self-awareness enables a person to stand apart and examine even the way they see themselves, which is called self-paradigm, the most fundamental paradigm of effectiveness. Furthermore, Covey believed it not only affects a person’s attitudes and behaviors, but it also affects how that person sees others. According to Maxwell (2014), lack of self-awareness and understanding of a leader’s blind spots can be harmful because leaders influence others, and their actions affect the organizational outcome; therefore, the problems that come from the blind spots are exaggerated. Self-awareness is fundamental to understanding one’s abilities. “Leader preparation begins with self-awareness about one’s strengths and limitations, followed by focused self-development” (DA, 2019b, pp. 6-2). Maxwell (1998) cited Lovell (n.d.), who said, “no one can produce great things who is not thoroughly sincere in dealing with himself” (Maxwell, 1998, p. 83).

Leaders need to like what they do and be proud of what they do. Thus, they also own the consequences of any actions they undertake and must understand the purpose of the future is to plan, since the only significant place is today. Tomorrow is not promised, so leaders should not be entrenched in a dream and neglect the present. “Lead yourself in ways that create great performance in others” (Cloud, 2013, p. 236).

U.S. Army Leader Development Strategy Section Summary

Sinek (2017) believed the “greatest contribution of a leader is to make other leaders” (p. 157). The U.S. Army develops adaptive leaders through training, education, and experience (DA, 2013a). “Leadership seems like maneuvering over ever faster and more undirected ball bearings” (Bennis & Nanus, 1997, p. 12). Maxwell (2005) argued the organization needs to develop leaders at every level. Maxwell (1988) added that “leadership development is not an add-water-and stir proposition. It takes time, energy, and resources” (p. 210). Leader development is “a process that aligns training, education, and experience to prepare leaders who exercise mission command to prevail in unified land operations” (DA, 2013a, p. 6)

Kotter (1996) reasoned that “the 21st century employee will need to know more about both leadership and management than did his or her 20th century counterpart” (p. 175). “It is not a challenge of survival anymore; it is a challenge of leadership” (Harari, 2002, p. 60). Drucker (1990) noted that “self-development is very deeply meshing in with the mission of the organization” (p. 189). The U.S. Army demonstrates initiatives to improve adult education throughout the organization by delivering “an adaptive blend of learner-centric training and education which combines with experience to enable development” (DA, 2011, p. 7). Training and education also provide the skills and confidence individuals need to perform duties and accomplish missions under a wide range of circumstances, some of which may be unfamiliar (DA, 2019f).

The Structured Self-development Program’s intent is to bridge the gap between operational and institutional domains and set conditions for continuous learning and self-improvement. The effectiveness of this process results directly from the total integration

of the three pillars of development: military training and education, training in units, and self-development. The ACES programs assist soldiers in achieving the lifelong synthesis of the knowledge, skills, and experiences required for success (DA, 2017a, 2019c). In the world of rapid modernizations, the U.S. Army must ensure it is “pedaling as fast as the corporate world is pedaling, the non-profit world is pedaling, the advocacy world is pedaling” (Harari, 2002, p. 61).

Adult Learning Participation

The ACE (2019) stated that “post-traditional learners have been a growing presence in America’s postsecondary EIs since the late 1970s and now make up close to 60% of enrolled undergraduates” (acenet.edu). The U.S. Army recognizes the importance of VoEd and provides various prospects to soldiers to pursue educational opportunities while serving on active duty; however, only a small number participate and complete the degrees for various reasons while serving on active duty. Overall, of the total sample population ($N = 110,188$), 4.33% have associate’s degrees, 9.31% have bachelor’s degrees, 0.75% have master’s degrees, and 0.05% have doctoral degrees (GoArmyEd, 2019). The educational attainment refers to the highest level of education completed (NCES, 2019c). The presented data raise a question: Why are the degree attainment statistics in the sample population so insignificant, and what prevents soldiers from participating in adult learning?

The decrease in EI enrollments is not an Army-specific problem. The NCES (n.d.) reported EI enrollments were 19.8 million in the fall of 2017, reflecting a 6% decrease from the record enrollments of 21 million in the fall of 2010. Furthermore,

enrollments are expected to remain below the 2010 record through fall 2028 (Hussar & Bailey, 2016).

Researchers have argued that the “participation in education and training is contributing to social mobility, providing a ladder of opportunity for some, a snake for others” (Edwards, Zeldin, & Sieminski, 2013, p. 1). Grossman et al. (2003) referred to the work of Sargant et al. (1997), Beinart and Smith (1998), and LaValle and Finch (1999) and contended that “a solid and cumulative body of knowledge on patterns of participation in adult learning exists” (as cited in Boeren, 2016, p. 55). Knowles et al. (1998) stated, “it is doubtful that a phenomenon as complex as adult learning will ever be explained by a single theory, model or set of principles” (p. I).

The Historical Aspect of Adult Participation Theories

Topics in adult participation in learning have a long history. Courtney (1989) indicated adult education has many faces but has existed for a long time. “In 1870, after the American Civil War, less than 2% of Americans attended college” (Phillips, 2000, p. 1). Attention to adult lifelong learning spiked in the 1970s and 1980s. Boeren (2016) stated interest in adult participation was renewed in the mid-1990s and remained a vital topic in modern times. Simultaneously, researchers have argued about “the declining confidence in the value of a college degree, particularly relative to the ballooning cost of postsecondary education and reported the pressure to do more with less” (Soares & Choitz, 2019). Between 2007-08 and 2017-18, prices for undergraduate tuition, fees, room, and board at public institutions rose 31%; and prices at private nonprofit institutions rose 23% after adjustment for inflation. Prices for TA, fees, room, and board

at private for-profit institutions decreased 9% between 2007-08 and 2017-18 (NCES, 2019a).

Johnstone and Rivera (1965) attempted to first explore the barriers of lifelong learning participation in North America (as cited in Boeren, 2016). They conducted empirical research and identified two major types of barriers: internal and external. In application to Cross's (1981) model, internal barriers are the *dispositional*, and external barriers are the *situational* (Boeren, 2016). Cross has been a well-known researcher for her chain of response (COR) model, which includes situational—presented through life situations, dispositional—dealing with lack of self-efficiency, and institutional—produced by the institutional structures barriers as part of the decision-making process of lifelong learning participation (Boeren, 2016). Darkenwald and Merriam (1982) offered an extension to Cross's chain of response model by adding one type of barrier, which they named *informational*. They argued the lack of communication regarding learning opportunities prevents adults from participation (as cited in Boeren, 2016). Boeren (2016) conducted the chronological review of the adult participation theories. McGivney (1990) offered the characteristics that distinguish non-participants from participants, such as age, educational background, and socioeconomic status, and debated the younger population is more likely to participate. Initial educational experience in adult life is another crucial factor in the decision to participate, and “the vast disparity in involvement in continuing education is situated at different levels of the social hierarchy” (as cited in Boeren, 2016, p. 15). Furthermore, McGivney's reasons for non-participation are (1) lack of information; (2) situational barriers, which include time and cost; (3) institutional

barriers; and (4) dispositional barriers, which include attitudes, perceptions, and expectations (Boeren, 2016).

The chronology of contribution to the adult lifelong learning participation theory is presented in Table 1.

Theories About Behavior

The three main learning theories can be grouped under behaviorism, cognitivism, and constructivism. This study explores participation from a behavioral perspective in which the “psychological literature focuses on a range of explanations, including the role of the decision-making processes to fulfill needs, the role of motivation, and the role of development in adulthood” (Boeren, 2016, p. 61). The behaviorism theory examines the change of behavior because of reinforcement, acquisition, and application of associations between stimuli from the environment and observable responses of the individual (Boeren, 2016).

“Miller (1967) borrowed Maslow’s need hierarchy to offer an account of how learning needs arise and links them by implication to adult life stages” (Courtney, 1992, p. 58). Participation depends upon the extent to which a person meets a range of primary and secondary needs (Maslow, 2013). Rubenson (1978) remarked that “if the experience of need is a critical factor in beginning the drive to participate, then this appears to place the weight on current circumstances rather than history” (as cited in Courtney, 1992, p. 60).

Table 1

The Chronology of Contribution to the Adult Lifelong Learning Participation Theory (Boeren, 2016)

| Timeframe | Researcher | Contribution to the adult lifelong learning participation theory |
|-----------|------------------------|--|
| 1965 | Johnstone & Rivera | Internal and external barriers |
| 1973 | Carp et al. | Surveyed adult learners and collected information on adult barriers to learning based on 24 response numbers |
| 1981 | Cross | Chain of response model Situational, dispositional, and institutional barriers |
| 1982 | Darkenwald & Merriam | Added informational barrier to Cross's model |
| 1990 | Valentine & Darkenwald | Constructed the deterrents to participation scale, which distinguished six factors of deterrence: lack of confidence, lack of course relevance, time constraints, low personal priority, cost, and personal problems. Five types of non-participants: (1) deterred by personal problems, (2) deterred by lack of confidence, (3) deterred by educational costs, (4) people not interested in organized education, and (5) people not interested in available courses. |
| 2006 | Chapman et al. | Five groups of barriers: (1) personal and societal, (2) financial, (3) geographic, (4) management, and (5) vision, mission, and identity. |

Note. Adapted from "Lifelong Learning Participation in a Changing Policy Context: An Interdisciplinary Theory," by E. Boeren, 2016. Copyright 2016 by Palgrave Macmillan.

Miller speaks about the changing nature of the life cycle's rise to different (Maslovian) needs but makes no case for why the experience of these needs should become learning needs. Rubenson accommodated this difference with his category, "perception of needs, but apart from his concepts of expectancy and valence, leaves the distinction between current needs and their perception unexplored. (Courtney, 1992, p. 61)

The model closest to the Miller and Rubenson themes is the Darkenwald and Meriam theory, which emphasizes social-environmental forces, precisely socioeconomic status, not because "individual traits or attitudes are unimportant but because less is known about their influence on participation" (as cited in Courtney, 1992, p. 66). According to Cookson's (1983, 1976) theory, "an individual's involvement with adult education carries implications for other kinds of social involvement" (Courtney, 1992, p. 70). Cookson (1983) noted that "participation in adult learning is conceptualized as part of an overall behavior pattern of social participation" (as cited in Courtney, 1992, p. 70).

Boeren et al. (2010) argued that the common aspect in the decision-making theories is "starting from decision making being internalized within the individual, while some theories are also focused on the surrounding social environment (as cited in Boeren, 2016, p. 62). Cross (1981) remarked that "people may engage in continuous lifelong learning simply because they have the itch to learn: others may participate when they have a need to know or when a specific reward for the learning effect is clear to them" (p. 96). Cross's theoretical framework was analogously applied in the characterization of the perceived barriers in adult learning (Deggs, 2011) and the examination of the adults' developmental needs as students (Terrell, 1990). Cross suggested "the answer to the

question of why adults participate in learning activities will probably never be answered by any simple formula” (p. 97).

Theoretical Framework

The chronological review of the North American empirical research regarding the barriers in adult lifelong learning confirms Cross’s chain of response model is still considered the most influential model in adult lifelong learning participation (Boeren, 2016; Deggs, 2011). Thus, the model was adopted as the framework for this study. According to Cross (1981), three types of barriers exist for adult learners wishing to engage in learning: (1) situational—resulting from an adult’s life situation; (2) institutional—produced by the institutional structures; and (3) dispositional—related to confidence; lack of self-efficiency (Boeren, 2016; Cross, 1981). Cross provided the definitions for each type of barrier. Situational barriers “arise from one’s situation in life at a given time such as job and home responsibilities” (p. 98). Institutional barriers are the barriers that result from the “practices and procedures that exclude or discourage working adults from participating in educational activities such as inconvenient schedules or locations, full-time fees for part-time study, inappropriate courses of study, and so forth” (p. 98). Dispositional barriers are “related to attitudes and self-perceptions about oneself as a learner” (p. 98).

The theoretical framework provides a working definition of the various types of barriers applied to the military students and also guides the researcher through this quantitative study when identifying and selecting the variables that may influence the adult participation in learning. Cross’s barriers classification is presented in Table 2.

Table 2

Soldiers' Barriers in VolEd Participation

| Type | Description | Impact on Soldier's Participation in VolEd |
|---------------|---|--|
| Situational | Factors affecting soldiers such as time, family obligations, money, work schedules, and familial or collegial attitudes and support for postsecondary education | Costs disproportional to perceived benefit, the impact on other family needs, time and location making attendance or participation difficult or impossible, relocation or mobility issues |
| Institutional | Institutional practices and systematic issues that include policies, procedures, attitudes and other formal and informal behaviors that discourage or prevent soldiers from VolEd participation | Unable to enroll when desired based on admissions requirements or timelines; lack of favorable tuition rates, especially for online delivery; required courses not available online or asynchronously inflexible course participation requirements; continued lack of recognition for prior learning and life experience; unable to meet institutional residency requirements; degree completion taking too long |
| Dispositional | Soldier's attitudes and self-perceptions about oneself as a learner. Also, concerns about age, unfavorable conditions in prior educational experiences | Fear of failure; unable to relate benefits of participation to personal or career goals |

Note. Adapted from "Adults as Learners: Increasing Participation and Facilitating Learning," by K. P. Cross, 1981, pp. 98-99. Copyright 1981 by Jossey-Bass.

According to Cross (1981), “participation in a learning activity, both organized and self-directed, is not a single act but the result of a chain of responses, each based on an evaluation of the position of the individual in his or her environment” (p. 125). The Cross’s chain of response model comprises of the following seven elements: (a) self-evaluation, (b) attitudes about education, (c) the importance of goals and the expectations that these will be met, (d) life transitions, (e) opportunities and barriers, (f) information on educational opportunities, and, finally, (g) the decision to participate.

Cross’s chain of response model, illustrated in Figure 8, comprises seven connected steps. It originates with an individual and ends with the external factors. According to the model, the positive experience on the current stage creates a strong possibility of moving to the next stage. Participation is likely to accrue if an individual moves through the stages with a positive experience. The presented model has a linear concept, and Cross (1981) agreed it may develop some issues in the systematic way to get to the final stage.

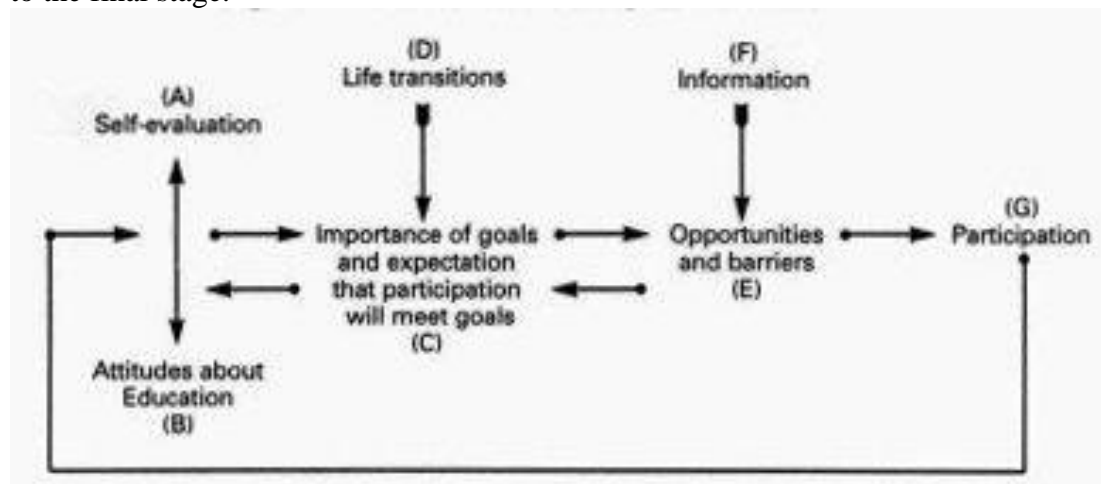


Figure 8. Cross’s chain of response model. Adapted from “Adults as Learners: Increasing Participation and Facilitating Learning,” by K. P. Cross, 1981, pp. 98-99. Copyright 1981 by Jossey-Bass.

Schlossberg's Life Transitions Theory as Competitive Theory

Another approach to this study would incorporate Schlossberg's (1984) transition theory. Transitions include any event or nonevent that results in changed relationships, routines, assumptions, and roles (Anderson, Goodman, & Schlossberg, 2012).

Furthermore, Anderson et al. (2012) suggested that "even though some transitions are out of individuals' control, they can control the way they manage them and strengthen their resources" (p. 38).

Because of the nature of the Army's mission, soldiers often are on the move. The U.S. Army requires the transformation and flexibility of soldiers to operate effectively and efficiently to balance personal and professional lives. Each major event, such as overseas deployment, duty station transfer, or unaccompanied tour, signifies a life transition that can cause significant stress for the soldiers and their families.

Schlossberg's (1984) transition theory helps to explain the complexities and how soldiers experience these life events. Schlossberg's theory could be linked to the educational pursuits and allows a better understanding of barriers toward adult participation with VoEd that soldiers face during their military careers, especially the transition phase, while pursuing their educational goals. However, the magnitude for understanding those transitions is complex without the direct experience. The transition events are directly tied to the individual; therefore, type, context, and impact of the transitions must be considered.

According to Schlossberg (1984), the experience of each transition has multi-dimensional complications, whether it be relocating to a new duty station, changing positions, or pursuing educational opportunities. Different transitions occur in soldiers'

lives (i.e., nonevent, anticipated, unanticipated). Schlossberg divided the event transitions into two categories: anticipated and unanticipated. Planned graduation from an EI is an example of the anticipated transition. Another type of transition is unanticipated, which may be characterized by unforeseen or unpredicted life events. The illustration of this transition would be divorce, unplanned re-assignment, severe illness, or death of a loved one.

The nonevent transitions include: (1) the personal nonevent, (2) the ripple-nonevent, (3) the resultant nonevent, and (4) the delayed nonevent. Gleiman, Swearingen, Zacharakis, Jeffrey, and Polson (2012) noted that all transitions are contextual; therefore, they are specific to the individual who is experiencing them. Schlossberg (1984) tied the personal nonevent transition to the inspirations of the individual. The transition is anticipated to happen but does not occur. The example of this transition is planned graduation or an expectation of getting the desired job. The ripple nonevent is a transition when someone else's nonevent affects soldiers' lives. An example of a ripple event is the delay in course enrollment because of the TA funding availability or policy change. The resultant nonevent is when the circumstances change and require a new course of action. The delayed nonevent is when the soldiers expect an event that might still happen. Figure 9 presents Schlossberg's individual in transition model.

Researchers' preference of Cross's (1981) adult participation theory versus Schlossberg's (1984) transition theory is based on practical application of the models to a soldier's military life cycle. Schlossberg's theory is more geared toward transition out of the military phase, while Cross's model demonstrates a better fit with focus on the

overall, bigger picture during the entire military service life cycle. Whetzel (2016) argued that Schlossberg's theory "turns into a last-minute struggle to prepare for the transition to civilian life, leading many service members to become unqualified or noncompetitive for civilian employment, because they did not prepare for their careers by earning an education in advance" (pp. 14-15).

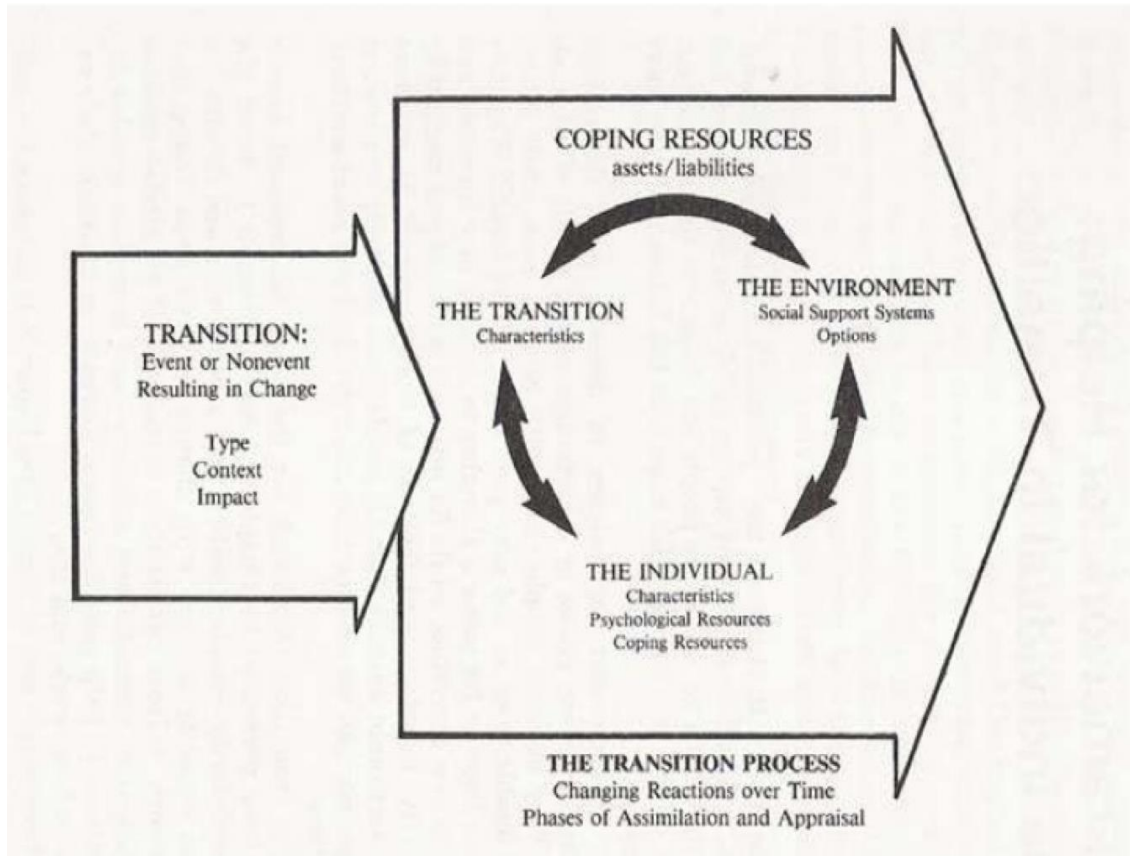


Figure 9. Schlossberg's Life Transition Theory. Adapted from "Counseling Adults in Transition: Linking Practice with Theory," by N. Schlossberg, 1984. Copyright 1984 by Springer.

Chapter II Summary

A review of the literature implies that the U.S. Army's approach to training and education helps Army leaders think clearly about "future armed conflict across the human dimension, learn about the future by optimizing leader development, analyze learning outcomes, gain intellectual and cognitive advantages over future adversaries, and

implement outcomes to refine training and education” (DA, 2017c, p. iii). Haggard (1963) reported “there is a remarkable agreement upon the definition of learning as being reflected in a change in behavior as a result of experience” (as cited in Knowles et al., 1998, p. 12). Through VolEd and the leader development and other related programs, the U.S. Army demonstrates the commitment to filling the gaps between soldiers’ educational capabilities and occupational requirements. The U.S. Army outlines both leader development and leadership development as “a process that aligns training, education, and experience to prepare leaders who exercise mission command to prevail in unified land operations” (DA, 2013a, p. 6).

The self-development domain of the leader development model is an excellent demonstration of how VolEd fits into the Army Leader Development Strategy. The VolEd Program pursuits help soldiers to elevate interests and boost the potential of opening doors and opportunities in their military career and beyond and to practice self-leadership. The VolEd Program and military training have an enduring reciprocal relationship. Early in history, “the military introduced new delivery systems and approaches to validating workforce learning that would later be adopted by adult education. With varying success, the military has consistently used adult education methodology as a cornerstone of professional military education” (Persyn et al., 2012, p. 14). Walters (2018) implied that the U.S. Army VolEd “conveys general bodies of knowledge and develops habits of the mind, applicable to a broad spectrum of endeavors” (p. 126). “Education is a leadership concept: the word education literally means ‘to lead from ignorance.’ Soldiers have to keep adding to their knowledge and skill base” (Kouzes & Posner, 1995, p. 60).

VolEd is increasing soldiers' opportunities for advancement and leadership by reinforcing their academic skills and occupational competencies with new skills and knowledge (DA, 2019c; DD, 2014). Army leaders require a solid educational basis and continual learning opportunities to empower them to manage and lead in an era of change. "Leaders develop through a combination of military training, education, and experiences supported by institutional training and education, operational assignments, and self-development" (DA, 2017a, 2019c, p. 7).

"Adult education in the military is a robust project that is touching many lives, yet its future is still evolving" (Zacharakis, Van Der Werff, & Polson, 2012, p. 89). An individual and the desire to participate in adult learning are critical to the organization's success. "Successful leaders are learners" (Maxwell, 1998, p. 24). Maxwell (1998) referred to the work of Bennis and Nanus (n.d.), who learned during the conducted study of 90 top leaders that discovery is about the relationship between growth and leadership: "It is the capacity to develop and improve their skills that distinguish leaders from their followers" (Maxwell, 1998, pp. 23-24). "Growth is the great separator of those who succeed long term from those who do not" (Maxwell, 2014, p. 105).

Furthermore, Maxwell (1998) asserted that "the learning process is ongoing, a result of self-discipline and perseverance" (p. 24). "Individual learning is one of the important elements of a high performing organization and is essential to self-leadership" (Blanchard, 2010, p. 93). Soldiers are responsible for their learning; however, the U.S. Army is supporting the development of knowledge and skills through the leader development program. "Exceptional organizations achieve greatness by focusing their strategies, unifying their cultures, aligning their strategies and cultures to exploit change,

and empowering their people toward enduring effectiveness and results” (Hickman, 1990, p. 261).

The researcher applies Cross’s (1981) theoretical framework to guide this study. Cross’s theory remains significantly recognized and most cited in modern research, and it is critical in understanding the barriers and creation and administration of effective non-traditional adult education programs (Deggs, 2011; McCann, Graves, & Dillon, 2012; Saar, Täht, & Roosalu, 2014).

CHAPTER III: METHODOLOGY

Introduction

“To win tomorrow, we must evolve how we organize and integrate the Army as part of the Joint Force” (DA, 2018a, p. iii). The U.S. Army is focused on “developing agile and adaptive leaders” (DA, 2015b) by “driving rapid, non-linear solutions in Army doctrine, organization, training, materiel, leadership, education, personnel, facilities, and policy” (DA, 2018a, p. iii). Harper and Sullivan (1996) commented that “developing leaders strengthens the ability of the organization to win today and tomorrow” (p. 214).

“Throughout the U.S. Army’s 243-year history, the grit, ingenuity, and initiative of the American Soldier stand at the forefront of our Nation’s success in peace, competition, and armed conflict” (DA, 2018a, p. iv). At this juncture, a clear understanding of the leader development domain in the VolEd context is critical to the enhancement of the adaptive leader development strategy and the success of the Army’s mission overall. The U.S. Army demonstrates significant efforts in reviewing and streamlining the approach to soldiers’ professional training and education through the U.S. Army doctrine, re-alignment of the current VolEd Program, and implementation of the new programs such as CA.

This study represented an attempt to gain a better understanding of demographic, military, and educational factors of the junior-enlisted RA soldiers in the rank of specialist in order to identify and analyze the barriers that soldiers encounter throughout the life cycle of the military career regarding meeting the educational goals in connection with the U.S. Army’s leadership doctrine. This chapter portrays the research design, the variables of this study, the target sample, and the methodology for analyzing and

studying pre-existing U.S. Army's databases. Also, this chapter presents the independent and dependent variables and defines each variable of the study and their connection to a logic model. Additionally, the research questions, previous research existence, and hypotheses related to a logic model are explored. The details about the databases used to accumulate the desired data are specified.

Furthermore, this chapter presents evidence about the chosen target sample while explaining that the sample may be applied to the entire U.S. Army enlisted soldier population serving in the RA and beyond. The chapter concludes with the ethical concerns related to this study. The following can be found in the appendices: IRB Documents (Appendices C-D), approval memorandum to use the U.S. Army's data (Appendix E), the Variable Definitions and Logic Model (Appendix F), and Variable Coding in STATA (Appendices G, H, I, and J).

Research Design and Logic Model

Cross (1981) stated that “the research methods for seeking answers to the motivation of adult learners fall into four basic designs: (1) depth interviews, (2) statistical analysis of motivational scales, (3) survey questionnaires, and (4) hypothesis testing” (p. 81). The researcher selected the hypothesis testing approach to guide this quantitative study. Gay et al. (2009) asserted “the primary goal of educational research is to describe, explain, predict, or control educational phenomena” (as cited in Mertler, 2019, p. 9). This quantitative research method used a deductive approach to reasoning to find the answers to the RQs. Mertler (2019) believed that deductive reasoning works from the broader scope of the research problem to the more specific in a top-down manner.

The research design of this non-experimental, correlational quantitative study was an exploratory, descriptive analysis of the pre-existing data collected from HRC eMILPO and ITAPDB databases. Non-experimental research is distinctive because the researcher “did not have direct control over any variables in the study because it has already occurred” (Mertler, 2019, p. 10); i.e., the researcher could not control any factors that may have influenced sample population behavior (McMillan, 2016). To accomplish the primary goal, the researcher carefully identified variable groups and variables from the data set, which may have affected the outcome of this research: demographic, educational, and military service-related. The researcher carried out the correlational studies to investigate relationships among two or more variables. This study was supplemented by an analysis of the relationships between various demographic, educational, and military service-related factors.

The target sample for this study included soldiers in the rank of specialist, serving in the RA, eligible for TA benefits, and not bearing any academic or military holds at the time of enrollment. The independent educational variables for this study included the cumulative total of classes taken with TA, CivEd, BSEP, and GT score. The demographic variables reviewed were gender, age, marital status, ethnicity, and race. The military service-related variables were MOS, PEBD, CMF, age into the army, and number of years in service. The educational dependent variables were successful course enrollments, to include passes and failures; unsuccessful course enrollments, including drops, withdrawals, and incompletes; TA GPA; and degree earned using TA. The researcher measured various combinations of variables to determine the degree of relationship between them.

To measure the extent of the relationship among variables, the researcher utilized the analysis of variance (ANOVA) statistical tests. Gall, Gall, and Borg (2007) noted that this type of design is adequate to measure the relationship between the criterion variable and two or more predictor variables of the study.

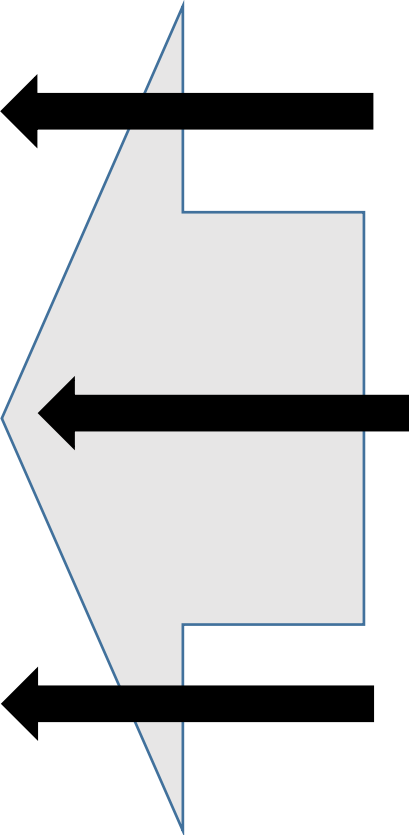
The goals of this study called for the sampling of U.S. Army junior-enlisted TA eligible soldiers in the rank of specialist serving in the RA who were participating in VolEd TA programs and were not pursuing the educational goals while serving in the RA in the rank of specialist. As such, those who were not pursuing the educational goals while serving in the RA in the rank of specialist could discover the characteristics of postsecondary education that would help them pursue educational goals more successfully. Also, the scores from one variable should predict the scores on the other variable as a form of correlational research.

Table 3 illustrates the independent and dependent variables of interest for the study. The researcher expected to determine that the results from the research would be valid for other samples selected from the same population.

The current study was designed to measure the magnitude of the relationship between the usage of TA of the eligible junior-enlisted RA soldiers in the rank of specialist and demographic, educational, and military service-related variables while taking into consideration the U.S. Army's leadership theories and strategies. All key variable definitions are located in Appendix F.

Table 3

Independent and Dependent Variables of Interest (Logic Model)

| Dependent Variables | | Independent Variables |
|--|---|---|
| <u>Educational Variables</u> <ul style="list-style-type: none"> • Successful Course Enrollments: <ul style="list-style-type: none"> • Passes • Failures • Unsuccessful Course Enrollments: <ul style="list-style-type: none"> • Drops • Withdrawals • Incompletes • TA GPA • Degree Earned Using TA |  | <u>Demographic Variables</u> <ul style="list-style-type: none"> • Age • Gender • Ethnicity • Marital Status • Race |
| | | <u>Military Service-Related Variables</u> <ul style="list-style-type: none"> • MOS • CMF • PEBD • Age into the Army • Years in Service |
| | | <u>Educational Variables</u> <ul style="list-style-type: none"> • Cumulative Total of Classes Taken with TA • BSEP • CivEd • GT Score |
| | | |

Research Questions

The central question for this study was: To what extent are the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA using TA on active duty?

This study's central and three additional exploratory RQs were focused on the reality that a majority of soldiers between 18 and 50 years old were not taking advantage of the resources at their disposal, and they were not electing to participate in the VolEd TA Program. However, the TA benefits and support of the Army education personnel are available at every Army military installation worldwide.

The research hypotheses follow the RQs. According to Johnson and Christensen (2017), a hypothesis is a formal statement of the prediction of the relationship that exists among the variables under investigation.

The following includes all three additional pragmatic RQs for this research, along with the relevant hypotheses:

RQ1: Is there a difference in the TA usage in the U.S. Army junior-enlisted soldiers in the RA on Active Duty based on demographic factors (such as age, gender, marital status, ethnicity, and race)?

Null hypothesis: There are no significant differences in TA usage in the U.S. Army junior-enlisted soldiers in the RA on Active Duty based on demographic factors.

RQ2: Does the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA differ based on military service-related factors (such as MOS, CMF, PEBD, age into the army, and number of years in service)?

Null hypothesis: There are no significant differences in TA usage in the U.S. Army junior-enlisted soldiers in the RA on Active Duty based on military service-related factors.

RQ3: To what extent do the educational factors (GT score, CivEd, BSEP, cumulative total of classes taken with TA) affect the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA?

Null hypothesis: There are no significant differences in TA usage in the U.S. Army junior-enlisted soldiers in the RA on active duty based on educational factors.

The four exploratory questions are rooted in the applied reality that all eligible junior-enlisted soldiers must meet basic U.S. Army TA eligibility requirements. Other preconditions that help define the TA eligibility include meeting the training or education prerequisite by the completion of AIT and possessing no military-related or academic holds.

Evidence Influencing Hypotheses

The first empirical question explored demographic factors. The researcher used the U.S. Army's pre-existing data for this study. Pre-existing data for the sample population of junior-enlisted soldiers serving in RA in the rank of specialist included gender, age, marital status, race, and ethnicity.

Since no known previous studies have been explicitly conducted to understand the TA usage within a sample of U.S. Army-junior-enlisted soldiers in the rank of specialist serving in RA, the best educated guess was that there would be no significant difference in TA usage within a sample of U.S. Army soldiers reviewed in this study based on demographics. "Regardless of the statistical outcomes of this study, the U.S. Army's

recent integration of female soldiers into every job specialty and career track made this question timely and relevant” (Walters, 2018, p. 206). The U.S. Army is focused on diversity and places particular emphasis on achieving the overall objective of ensuring all Army employees have equal opportunities to compete fairly in all aspects of Army human capital activities (DA, 2019g). The U.S. Army places particular emphasis on affirming the value of workforce diversity; cultivating a culture of inclusion; and implementing human capital policies designed to recruit, develop, and retain the best and brightest of America’s diverse talent pool. Currently, the U.S Army conducts the following special programs: (1) the Federal Women’s Program, (2) the Hispanic Employment Program, (3) Black/African American Employment Program, (4) Disabled Veterans Affirmative Action Program, and (5) Asian American and Pacific Islander Employment (DA, 2019g). Boeren (2016) claimed the “outcome of the decision-making process regarding participation in adult learning opportunities is also likely to be different for people of a different race or ethnicity than the dominant racial or ethnic group in the community in which they are living” (p. 94).

The second empirical question explored military service-related factors. The researcher reviewed the following factors available in the pre-existing dataset: MOS, CMF, PEBD, age into the army, and number of years in service. Other military service-related factors were unavailable due to the pre-existing data utilization and dataset limitations. Soldiers in the sample were in the same rank (specialists) but represented different military occupational specialties grouped into 25 various career management fields CMFs (DA, 2019e). The military service-related question of this study was exploratory because there were no known previous studies related to TA usage based on

military service-related factors. However, the default assumption was that the Army's CMFs would have some relationships to soldiers' TA usage based on the job, training requirements, and other occupational factors.

The researcher designed the third research question to identify variance in TA usage that may have been influenced by differences in the specialized military or civilian education and experiences. The third empirical question explored educational factors and their effects on TA usage overall and had exploratory characteristics because there were no known previous studies related to TA usage and VolEd participation. However, the default assumption was that the TA usage likely would have had some relationship to previous educational experiences.

Instrumentation

Pre-existing data were utilized for this study. The dataset was pulled from GoArmyEd on September 30, 2019. The dataset included the raw values from the ITAPDB that GoArmyEd received on a nightly basis and contained the records of soldiers that qualified for TA usage. Soldiers not generally qualified for TA were not included within the database. Any data excluded from the GoArmyEd ITAPDB feed did not impact or influence the target soldier population. The data were used as is without modifications.

Validity

McMillan (2016) argued that "validity is a judgment of the appropriateness of a measure for the specific inferences, interpretations or conclusions that result from the scores generated by the measure" (p. 155). To ensure the validity of this study, the researcher applied processes of internal and external validity accordingly to ensure the

results could be interpreted accurately and could be generalized to populations, situations, and conditions (Wiersma & Jurs, 2005).

Cates (1985) stated “validity refers to the extent to which something does what it claims to do” (p. 123). Mertler (2019) noted that “validity in quantitative research is an essential quality that has to do with whether the data are, in fact, what they are believed or purposed to be” (p. 306).

Reliability

Mertler (2019) argued that “reliability, a second essential characteristic of quantitative data, refers not to the accuracy of data and subsequent inferences, but to the consistency of those data” (p. 216). A more concise definition is that “reliability refers to the consistency with which an instrument produces equivalent scores” (Cates, 1985, p. 124). Wiersma and Jurs (2005) expanded the definition of reliability by adding that the “reliability of research concerns the replicability and consistency of the methods, conditions, and results” (p. 9). McMillan (2016) asserted that “reliability is a necessary condition for validity. Scores cannot be valid unless they are reliable” (p. 168).

Population and Sample

The U.S. Department of Defense is the largest employer in America, operating approximately 4,800 defense sites in 160 countries globally. The DoD employs 3.87 million people, including 2.15 million service members and 732,079 civilians (DD, 2019e).

The U.S. Defense Manpower Data Center (DMDC) serves under the Office of the Secretary of Defense (OUSD) to coordinate personnel, workforce, training, financial, and other data for DoD. This data catalog the history of personnel in the military and their

families for purposes of healthcare, retirement funding, and other administrative needs (DMDC, 2019). The DMDC is utilizing over 230 current and historical databases, websites, and programs (U.S. DMDC, 2019).

In FY 2019 on the date of this study, DMDC manpower reports indicated 1,303,894 active duty military personnel were serving in DoD (DMDC, 2019). This number represented the total of both enlisted and commissioned active duty uniformed service members in all U.S. military branches, specifically the Army, Navy, Marine Corps, and Air Force, with the exception of the DoD civilians and uniformed members of Army National Guard (ARNG) and the U.S. Army Recruiting Command (USAR) throughout the DoD. The following represented the total Armed Forces strength: Army = 483,941; Navy = 336,985; Marine Corps = 186,009; Air Force = 332,101; and Coast Guard = 41,858 (DMDC, 2019). “Enlisted personnel make up about 82% of the Armed Forces and carry out military operations” (DOL, 2019).

As of September 25, 2019, the number of soldiers in the U.S. Army, enlisted members, and commissioned officers was around one million (exactly 881,390) who were serving in the RA = 468,829, ARNG = 196,793, and USAR = 215,768 (ITAPDB, 2019). In the interest of this study, the population of only enlisted RA soldiers in the U.S. Army was reviewed. The number of enlisted soldiers in all three Army components, which included RA, ARNG and USAR, was 697,647 soldiers: RA = 369,568, ARNG = 157,565, and USAR = 165,596 (ITAPDB, 2019).

This DoD workforce performs over 800 types of jobs across a broad spectrum of occupational groups (DOL, 2019). The RA enlisted personnel were represented by broad occupational groups: administrative = 5,015; combat specialty = 96,790;

construction = 14,581; electronic and electrical equipment repair = 26,851; engineering, science, and technical = 35,907; healthcare = 25,303; human resources development = 15,424; machine operator and production = 4,172; media and public affairs = 4,687; protective service = 19,206; support service = 9,913; transportation and material handling = 45,907; vehicle and machinery mechanic = 43,683; non-occupation or unspecified coded personnel = 28,161 (DOL, 2019).

The total number of soldiers in the rank of specialist serving in the U.S. Army as of September 25, 2019, was 212,841, to include: RA = 110,815, ARNG = 46,480, USAR = 55,546 (ITAB, 2019). Figure 10 demonstrates the relationship among the target population, the sampling frame, and the sample.

The total number of enlisted soldiers in the RA from the ranks of private (E-1) to sergeant major (E-9) included the following: private (E-1) = 8,973; private second class (E-2) = 20,732; private first class (E-3) = 48,242; specialist and corporal (E4) = 110,815; sergeant (E-5) = 69,473; staff sergeant (E-6) = 57,331; sergeant first class (E-7) = 38,153; master sergeant and first sergeant (E-8) = 12,038; command sergeant major (CSM) and sergeant major of the Army (E-9) = 3,781 (ITAPDB, 2019). As shown in Figure 11, the U.S. Army RA specialists comprised 30% of the entire U.S. RA enlisted population force as of September 25, 2019.

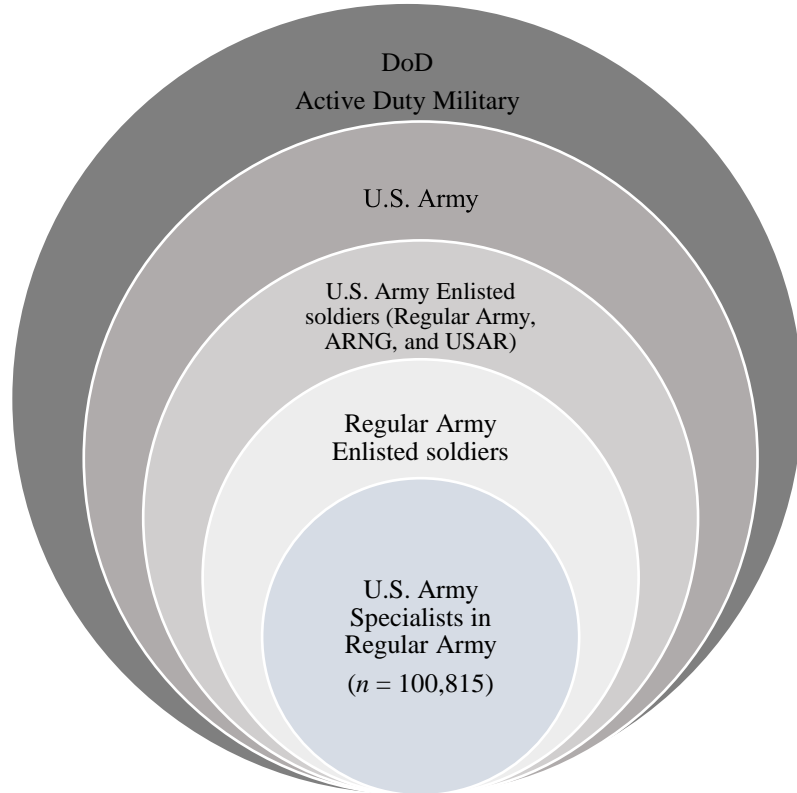


Figure 10. Relationship among target population, sampling frame, and sample. Adapted from “Fundamentals of Educational Research, 7th ed.,” by J. McMillan, 2016, p. 115. Copyright 2016 by Pearson.

The U.S. DoD is one of the largest, most complex organizations in the world, employing over 3.8 million people (DMDC, 2019). Narrowing the U.S. military population from millions of uniformed service members and civilians from the four U.S. military branches of Army, Air Force, Navy, and Marine Corps, as well as the various enlisted to include warrant officer, cadet, and commissioned officer ranks, this study centered on a much smaller and more homogeneous population.

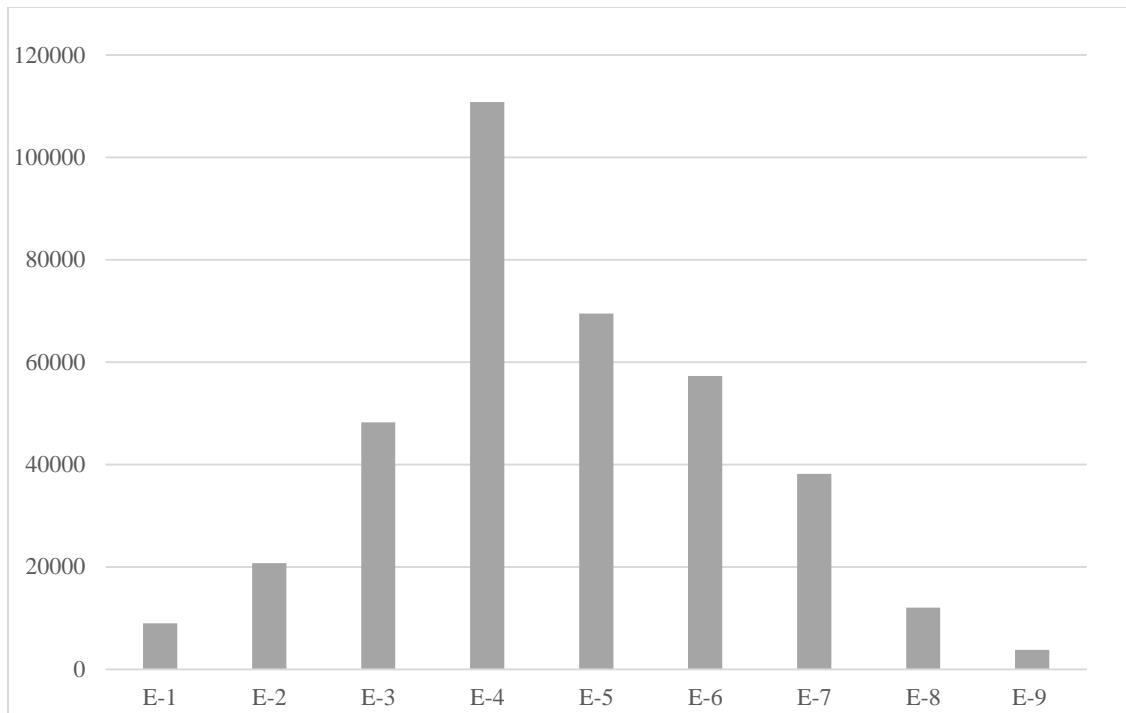


Figure 11. The U.S. Army's enlisted population in the regular army by rank. The DMDC data as of September 25, 2019.

This study defined the population as the 110,188 junior-enlisted soldiers in the rank of specialist serving in the RA as of September 30, 2019. DMDC data were used to illustrate overall population trends within the Armed Services. However, this study used data from the ITAPDB feed. As such, there was a discrepancy of 627 enlisted soldiers in the rank of specialist who were not included in the research. The difference in data may have been attributed to various reasons, such as different dates of data pull, different data refresh cycles between ITAPDB and DMDC databases, or other unknown factors. This difference represented 0.06% in population and was considered insignificant based upon the population size under consideration. The ARNG and USAR junior-enlisted soldiers were not studied in this research. Of the ($N = 110,188$) specialists in the U.S. Army serving in the RA, ($n = 93,073$) were males (ITAPDB, 2019).

Target Sample

According to Mertler (2019), “a subset of the population for an actual study, such that it is representative of the accessible population so the results can be generalized to the larger group” (p. 304). Daniels and Minot (2020) stated, “sampling is the process of selecting the sample in a way that ensures it will be representative of the population” (p. 13). Based on the goals, limitations, and timeline of this study, the eligible junior-enlisted soldiers in the rank of specialist serving in the RA who were eligible to participate in the TA program represented an ideal sample. This population is the largest underserved population within the RA, as shown in Figure 11.

The researcher placed importance on the study of this population based on the understanding that this population was at a pivotal career point of their military service. Not all E-4s will become the senior non-commissioned officer (NCO); some will exit the military to pursue educational opportunities or join the civilian workforce. The ultimate purpose of this study was to gain further understanding regarding the largest academically underserved population, the U.S. Army soldiers in the rank of specialist serving in the RA, which provided valuable insight into the population’s needs in regard to academic engagement and achievement.

Procedures Used to Collect Data

The researcher analyzed the pre-existing data regarding the soldiers’ experiences as adult learners while serving in RA. Cross (1981) noted three types of barriers for adult learners wishing to engage in learning, which guided the data analysis and reduction process. Those include the following: (1) situational, (2) institutional, and (3) dispositional barriers. The data used for this study were retrieved from ITAPDB from

GoArmyEd databases. The ITAPDB data were pulled from the U.S. Army eMILPO before being incorporated into the ITAPDB feed. The researcher obtained permission to use the data prior to the research (Appendix E).

Data Cleaning

The data from ITAPDB included soldiers' information for three components of the Army. The researcher used only data for the U.S. Army enlisted soldiers serving in RA. The data set was modified to include only soldiers in the rank of specialist serving in the RA. Blank values, null values, and two soldiers with unexpected ages (17 and 51 years) were excluded from the dataset, as they were considered the outliers. "An outlier is an observation that lies extremely far from the mean or other values in a variable" (Daniels & Minot, 2020, p. 59).

Variables and Coding

By design, GoArmyEd utilizes the following grading classifications: (1) pass, (2) failure, (3) drop, (4) withdrawal, and (5) incomplete. As previously outlined in this chapter, one of the dependent variables for this study included successful course enrollments comprised of passes and failures. The U.S. Army places emphasis not only on the course enrollments, but also on the successful course enrollments leading to the degree attainment as an overall goal. To receive TA, soldiers must enroll in courses that support a specific academic goal. As such, VolEd must lead to a credential, such as a high school diploma, certificate, or college degree, signifying satisfactory completion of the educational program (DA, 2019c; DD, 2014).

The ACES vision states that "every Soldier participates in the VolEd program, and every eligible Soldier uses TA for degree completion" (DA, 2019c, p. 5). The

unsuccessful course enrollments variable included drops, withdrawals, and incompletes. Incompletes were not considered in the category of successful course enrollments because of the unknown nature of the grade change outcome. Furthermore, the researcher did not consider withdrawals in the overall TA GPA calculations. The TA GPA calculations for completed classes provided the historical data on the enrollments within the target population, which was derived from all graded classes taken through GoArmyEd or the previous Army education automated system known as EDMIS.

Due to limitations of the GoArmyEd system regarding the historical data access and availability, the researcher incorporated into analyses the enrollment data from FY 2016 to FY 2019 (October 1, 2015, to September 30, 2019). This approach to the analyses provided an opportunity to access the current CivEd levels in the sample population and to review the present engagement in lifelong learning.

Furthermore, other educational dependent variables considered in this study were TA GPA and the degrees earned using TA. The researcher grouped the key independent variables for this study into demographic, educational, and military service-related categories. The details for data coding are outlined in Appendix G.

Data Analysis

The data collected during this study included the U.S. Army pre-existing data, which were analyzed using statistical and data analysis software Stata version 16.0. According to Mehmetoglu and Jakobsen (2017), Stata is statistical software that contains a comprehensive and continuously updated list of built-in analytical (linear models, longitudinal imputation) and data management features (importing and exporting data, combining datasets); a further collection of features developed by researchers enabled by

Stata's programming language. Daniels and Minot (2020) argued that "although SPSS is one of the most widely used statistical packages, the use of Stata is growing rapidly" (p. xiv).

Data analysis procedures involved in this study included a review of the demographic, educational, and military service-related factors in TA usage and participation in the U.S. Army's VolEd Program. For this study, the independent variables included demographic factors such as age, gender, marital status, race, and ethnicity; military service-related factors, to include MOS, CMF, PEBD, age into the army, and number of years in service; and various educational factors: GT score, CivEd, BSEP, and cumulative total of classes taken with TA. According to Mertler (2019), the independent variables are "any variables over which the researcher has the control in a study, meaning that the researcher determines which participants in the study will receive which condition" (p. 299).

"The dependent variable is the variable of ultimate interest in a research study" (Mertler, 2019, p. 297). This study was focused on increasing the TA usage; therefore, one of the dependent variables for this study was successful course enrollments, with the considered positive outcome as successful course completion and the negative outcome as drops, withdrawals, or failures.

The researcher ensured the sample data were clean, with no blanks and invalid data entries. Next, the researcher obtained the descriptive statistics for both categorical and continuous variables. According to Mertler (2019), descriptive statistics enable the researcher to summarize, organize, and simplify data.

Two main types of descriptive statistics were of interest, depending on the measurement level of a variable: the frequency distribution if the measurement level is the nominal or ordinal; and the central tendency if the measurement level is interval or ratio. (Mehmetoglu & Jakobsen, 2017, p. 31)

In the case of this study, both the central tendency and the frequency distributions were measured.

While the central tendency indicates what is typical about the set of scores, variability indicates what is atypical about those scores (Mertler, 2019). “Regardless of the focus of the study and the guiding RQs, descriptive statistical analyses are fundamental when it comes to simplifying and summarizing data in any study” (Mertler, 2019, p. 228). Frequency distributions, measures of central tendency, measures of variability, measures of relationship, and measures of relative position are all appropriate statistical analyses techniques applicable to categorical (nominal and ordinal scale) and continuous (interval and ratio) variables.

Pallant (2013) emphasized that descriptive statistics include the mean, standard deviation, range of scores, skewness, and kurtosis. The skewness value conveys the sign of the symmetry of the distribution (Johnson & Christensen, 2017). “Kurtosis, on the other hand, is a measure of the pointiness of distribution and was introduced by Pearson in 1905” (Mehmetoglu & Jakobsen, p. 326). Also, “to true statistical analysis procedures, data can also be displayed visually through the use of frequency distribution tables or graphs, such as histograms, bar charts, or pie charts” (Mertler, 2019, p. 237). Upon completion of the descriptive statistics procedures, the researcher utilized the statistical techniques to explore the relationships among variables.

The Pearson product-moment correlation between educational, demographic, and military service-related variables and the dependent variables of the study was employed to understand the relationship between two variables. McMillan (2016) noted that “a relationship means that the values of the variables vary together; that is, if there is a correlation, the value of one variable can be predicted to some extent by knowing the value of the other” (p. 153).

The researcher also used the analysis of variance (ANOVA), which is a parametric procedure to compare group means to determine the probability of being wrong in rejecting the null hypothesis (McMillan, 2016). The researcher used ANOVA procedures to explore whether there was a significant difference between groups (based on demographic, military service-related, or educational variables) on the composite dependent variable (TA usage). Consistent with the reporting analysis of ANOVA and multivariate findings, the following may be reported: the degrees of freedom (*DF* within/*df* between), observed F value, significance level, post hoc comparisons, and overall power and effect size (Gall et al., 2013).

Ethical Considerations

This study used an analysis of the pre-existing data collected by the U.S. Army. There were no known changes to conflicts of interest related to this study. The research data were stored on the government secured network only for the duration of the study. All work on the data analysis was conducted under the authority of the DoD and other federal, state, and local laws as they related to this research. Also, all data were password protected. In addition, the researcher complied with the Joint Ethics Regulation, DoDI 5500.7-R. The ITAPDB dataset was modified to remove all personally identifiable

information before working with the dataset, and all precautions were taken to ensure that data could not be used to link back to individual soldiers.

Chapter III Summary

The present study took a quantitative approach and focused on determining the factors affecting the RA junior-enlisted soldiers in the rank of specialist in reaching their educational goals. The researcher used the pre-existing data, which were collected and stored by the U.S. Army HRC from October 1, 2015, to September 30, 2019. The data review allowed the researcher to identify 24 variables of interest concerning this study. After data analysis, the researcher classified 14 unique variables into three primary categories: demographic, educational, and military service-related. In addition to the three primary groups, the researcher classified other educational variables that were related to TA usage and presented a primary interest in the current study due to the U.S. Army's need for a better understanding of the soldiers' barriers in VolEd for fostering leadership development while encouraging self-awareness and self-growth.

The primary dependent variable for this study was successful course enrollments comprising passes and failures. The Army places importance, not on the course enrollments, but on the successful course enrollments leading to the degree obtainment as an overall goal (DA, 2019c). In compliance with current Army policy, the TA usage must lead to a credential, such as a high school diploma, certificate, or college degree, signifying satisfactory completion of the educational program (DD, 2014). The TA GPA and the degree earned using TA were considered as dependent variables as well.

Rather than focusing on the entire U.S. military or the U.S. Army as a population, the limited and defined population of focus for this study was 110,188 U.S. Army

specialists currently serving in the U.S. Army in RA component. Upon the population review, the researcher identified that 83.80% of all the U.S. Army specialists in the RA had a basic GoArmyEd account. However, only 14.35% had an academic degree. These U.S. Army soldiers represented an ideal sample for the goals of this study because they demonstrated the underserved population in the U.S. Army. This target population provided insights on the U.S. Army's VolEd effectiveness and an opportunity for enhancement of overall organizational leadership development strategy through civilian education. Civilian education is a vital aspect of self-development that prepares leaders for responsibilities and enhances their abilities to make decisions in future conditions of uncertainties (DA, 2017b). This quantitative study was an attempt to understand the U.S. Army soldiers' educational pursuits using the TA, as well as to help identify and remove the barriers to maximize leader development and to increase readiness in support of the Army's overall leader development strategy.

CHAPTER IV: RESULTS

Introduction

This chapter presents the results of the data analysis of the study's sample, represented by the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA as of September 30, 2019. The population sample included 110,188 soldiers. Pre-existing data, collected by the U.S. Army and stored on ITAPDB and GoArmyEd, were utilized for this study. The researcher reviewed various demographic, military service-related, and educational factors to determine to what extent these factors contributed to VoEd participation, specifically related to TA usage among the U.S. Army's junior-enlisted soldiers' population in the rank of specialist, serving in the RA.

Chapter III explained the details about the targeted sample based on the goal to review and identify the factors that played an essential role in VoEd participation. The study's RQs and a brief description of the hypotheses are repeated in this chapter for the reader's convenience. The central research question of this study was: To what extent are the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA using TA while on active duty? To address the primary goal of this study, the researcher investigated the following three additional RQs using a null hypothesis.

RQ1: Is there a difference in the TA usage in the U.S. Army junior-enlisted soldiers in the RA on Active Duty based on demographic factors (such as age, gender, marital status, ethnicity, and race)?

RQ2: Does the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA differ based on military service-related factors (such as MOS, CMF, PEBD, age into the army, and number of years in service)?

RQ3: To what extent do the educational factors (GT score, CivEd, BSEP, cumulative total of classes taken with TA) affect the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA?

The researcher utilized the exploratory approach because no known studies have examined the TA usage within the U.S. Army junior-enlisted population. The study's three hypotheses were based on a literature review of research related to factors that affect participation in adult learning (Boeren, 2016; Cross, 1981; Deggs, 2011; Knowles et al., 1998).

Descriptive Statistics

“Regardless of the focus of the study and guiding research question, descriptive statistical analysis is fundamental when it comes to simplifying and summarizing data in any type of study” (Mertler, 2019, p. 228). Pre-existing data contained demographics of junior-enlisted soldiers in the rank of specialist serving in the RA as of September 30, 2019. According to Mertler (2019), “measures of central tendency comprise a single score that represents what is typical among a group of scores. They provide an extremely efficient means of summarizing variables with lots of data into a single value” (p. 229).

The statistical mean age of U.S. Army soldiers serving in the RA in the rank of specialist was 21.5 years. The researcher removed two outliers to present the most accurate picture: the oldest U.S. Army specialist serving in the RA in the data set was 51, and the youngest was 17. The researcher screened data for errors such as falling outside the ranges of possible values for variables since “scores that fall outside the possible range can distort statistical analyzes” (Pallant, 2013, p. 45). Also, the researcher discovered that the statistical mean age for males was 20, and for females it was 21. The

majority of soldiers in the sample category were ages 22 to 25. A frequency distribution provided the researcher with a mechanism to verify the accuracy of the data to ensure errors were not made in data entry and coding. The frequency tables confirmed the accuracy of the data. Table 4 provides the demographic data for the sample population used in this study.

Table 4

Demographics of Soldiers in the Rank of specialist Serving in the Regular Army

| Item | Frequency | Valid Percent (%) |
|--------------|-----------|-------------------|
| Gender | | |
| Female | 17,115 | 15.53 |
| Male | 93,073 | 84.47 |
| Age | | |
| 18-21 | 25,072 | 22.75 |
| 22-25 | 52,156 | 47.33 |
| 26-29 | 22,259 | 20.20 |
| 30 and older | 10,699 | 9.71 |

Note. $N = 110,188$. Data were obtained from ITAPDB on September 30, 2019.

Of the specialists in the U.S. Army serving in the RA ($N = 110,188$), 93,073 were males and 17,115 were females (ITAPDB, 2019). The entire sample, as of September 30, 2019, revealed that 84.47% were males. Therefore, the data revealed a larger number of males than females in the sample population.

Boeren (2016) maintained that “based on age, society tends to divide people into specific cohorts” (p. 92). An identified age bracket falls into the millennial and Generation Z pool, which represents over 90% of soldiers in the U.S. Army junior-enlisted soldiers population serving in the RA. Kouzes and Posner (2010) reported that “millennials are an influential group and on the cusp of replacing baby boomers as a

game-changing force because of their size and position” (p. xv). Junior-enlisted soldiers in the U.S. Army are millennials, and Generation Z represents the most significant population within the U.S. Army. Therefore, an understanding of typical characteristics of a soldier from this group was necessary for the success of this study, as the shift in generations places new demands on organizations and requires new approaches to the leadership concepts.

Within the usable sample, 57.80% ($n = 63,689$) were single soldiers; 39.81% ($n = 43,865$) were married soldiers; and 2.39% ($n = 2,634$) were divorced, annulled, legally separated, or widowed soldiers. For the purposes of this study, the researcher categorized soldiers as married ($n = 43,865$, or 39.81%), or not married ($n = 66,323$, or 60.19%).

Within the usable sample, 67.89% ($n = 74,803$) soldiers self-identified as White; 23.46% ($n = 25,852$) as Black; 6.50% ($n = 7,163$) as Asian/Pacific Islander; 0.83% ($n = 920$) as American Indian or Alaska Native; and 1.32% ($n = 1,450$) as other or unknown. Of the two largest categories of race, 64.82% ($n = 48,491$) self-identified as None; 34.23% ($n = 25,611$) as Hispanic/Latin-American; and 0.94% ($n = 701$) under a different ethnic category for the racial category of White. Also, 79.75% ($n = 20,616$) self-identified as none, 16.76% ($n = 4,333$) as other, and 3.49% ($n = 903$) under a different ethnic category for the racial category of Black. For the purposes of this study, the primary category was race, and the second category was ethnicity.

Within the sample, 26.98% ($n = 89,757$) of junior-enlisted soldiers in the rank of specialist had three years of service. The combined total average was three years of service for specialists within the U.S. Army.

The study sample captured all 25 of the CMF: ($N = 110,188$); infantry 14.05%, ($n = 15,476$); supply and services 12.25% ($n = 13,494$); mechanical maintenance 10.58% ($n = 11,661$); medical 10.10% ($n = 11,124$); communications 7.84% ($n = 8,644$); aviation 6.83% ($n = 7,525$); military intelligence 5.11% ($n = 5,626$); field artillery 4.79% ($n = 5,274$); transportation 4.70% ($n = 5,181$); engineer 4.70% ($n = 5,180$); armor 4.18% ($n = 4,609$); military police 3.67% ($n = 4,048$); adjutant general 2.69% ($n = 2,960$); air defense 2.32% ($n = 2,557$); chemical/biological/radiological 1.22% ($n = 1,345$); electronic maintenance 1.17% ($n = 1,290$); ammunition 0.92% ($n = 1,015$); Special Forces 0.83% ($n = 911$); paralegal 0.40% ($n = 440$); financial management 0.34% ($n = 372$); chaplains 0.33% ($n = 368$); cyber operations 0.20% ($n = 221$); public affairs 0.06% ($n = 65$); psychological operations 0.03% ($n = 36$); and officer and WO candidates, army band, and interpreter and translators comprised the remaining 0.69% ($n = 766$). Infantry, supply and services, mechanical maintenance, and medical were the largest CMF groups and, combined, represented 47% of the total sample population.

CivEd by Gender

Due to the CivEd coding complexity used by the U.S. Army in GoArmyEd, the researcher simplified existing data and organized the codes into six categories: (1) high school or GED, (2) some college, (3) associate's, (4) bachelor's, (5) master's, and (6) doctoral degrees. Figure 12 presents the overall degree attainment by the U.S. Army soldiers in the rank of specialist serving in the RA as of September 30, 2019.

The researcher reviewed and compared the degree attainment by gender by the U.S. Army soldiers in the rank of specialist serving in the RA, and the results are presented in Figure 13.

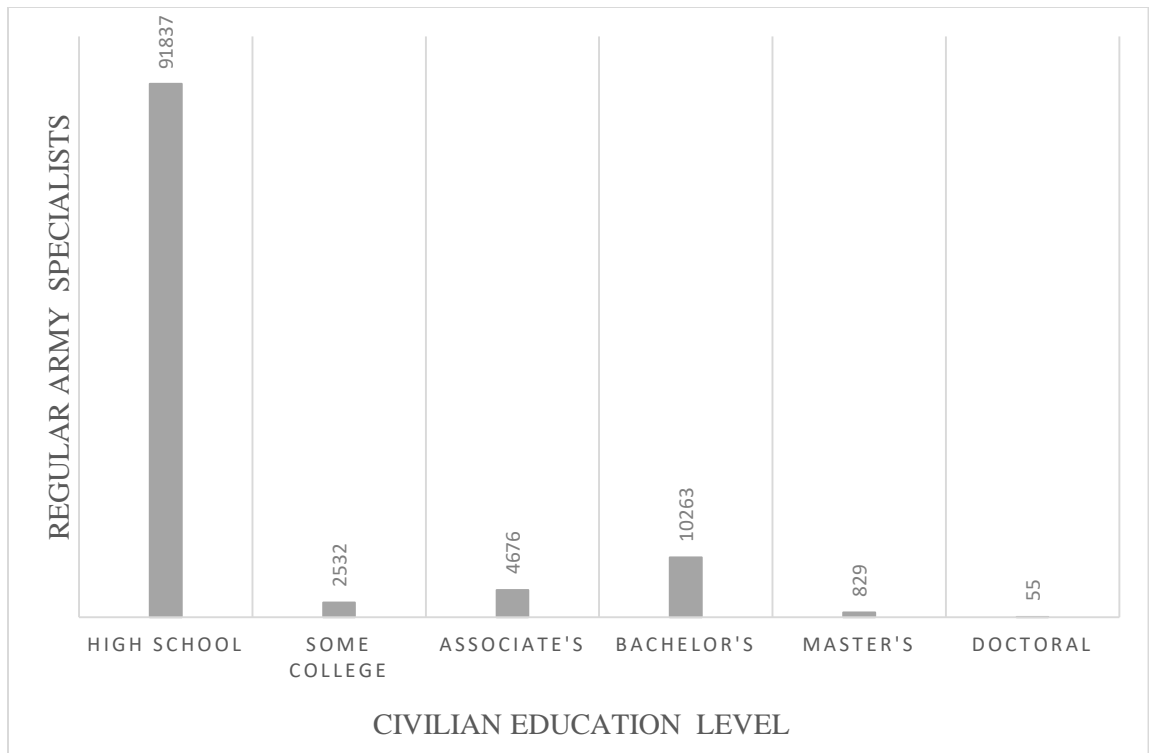


Figure 12. CivEd levels of the U.S. Regular Army junior-enlisted soldiers in the rank of specialist. $N = 110,188$. Data were obtained from ITAPDB on September 30, 2019.

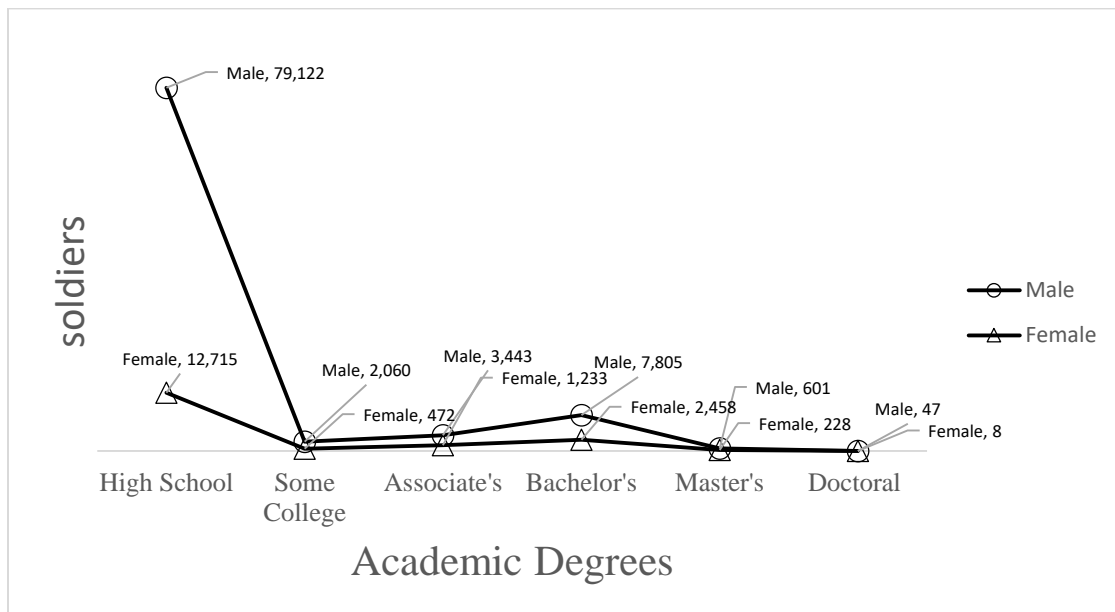


Figure 13. The degree attainment by gender of the U.S. Army soldiers in the rank of specialist serving in the U.S. regular Army. Total sample population, $N = 110,188$; male soldiers, $n = 93,073$; female soldiers, $n = 17,115$. Data were obtained from ITAPDB on September 30, 2019.

The data represented in Figure 14 describe the attainment of academic degrees within the sample population of the U.S. Army junior-enlisted population of specialists in the RA based on gender. According to data analysis, 85% of male U.S. Army soldiers in the rank of specialist serving in the RA did not have any formal education beyond a high school diploma or GED. According to calculations, 74.29% of female soldiers in the same sample set did not have any formal education beyond a high school diploma or GED. According to the analysis, females were more likely to have a postsecondary educational attainment post-high school compared to their male counterparts within the sample population.

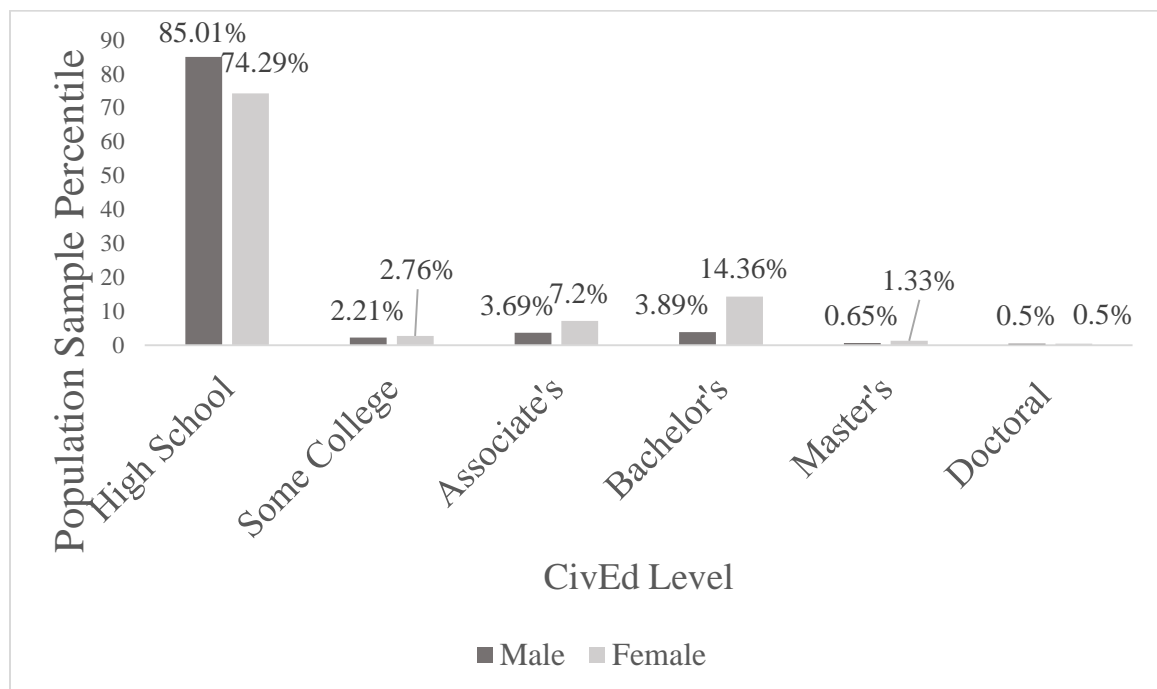


Figure 14. CivEd distribution within the junior-enlisted E-4 personnel in the regular Army by gender. Total sample population, $N = 110,188$; male soldiers, $n = 93,073$; female soldiers, $n = 17,115$. Data were obtained from ITAPDB on September 30, 2019.

As shown in Figure 15, within the overall picture for the total population of the U.S. soldiers in the rank of specialist in the RA, which was comprised of 110,188 soldiers, 83.35% had attained the high school diploma or GED, 2.30% took some college

classes, 4.23% earned associate's degrees, 9.31% had bachelor's degrees, 0.75% had master's degrees, and 0.50% had doctoral degrees.

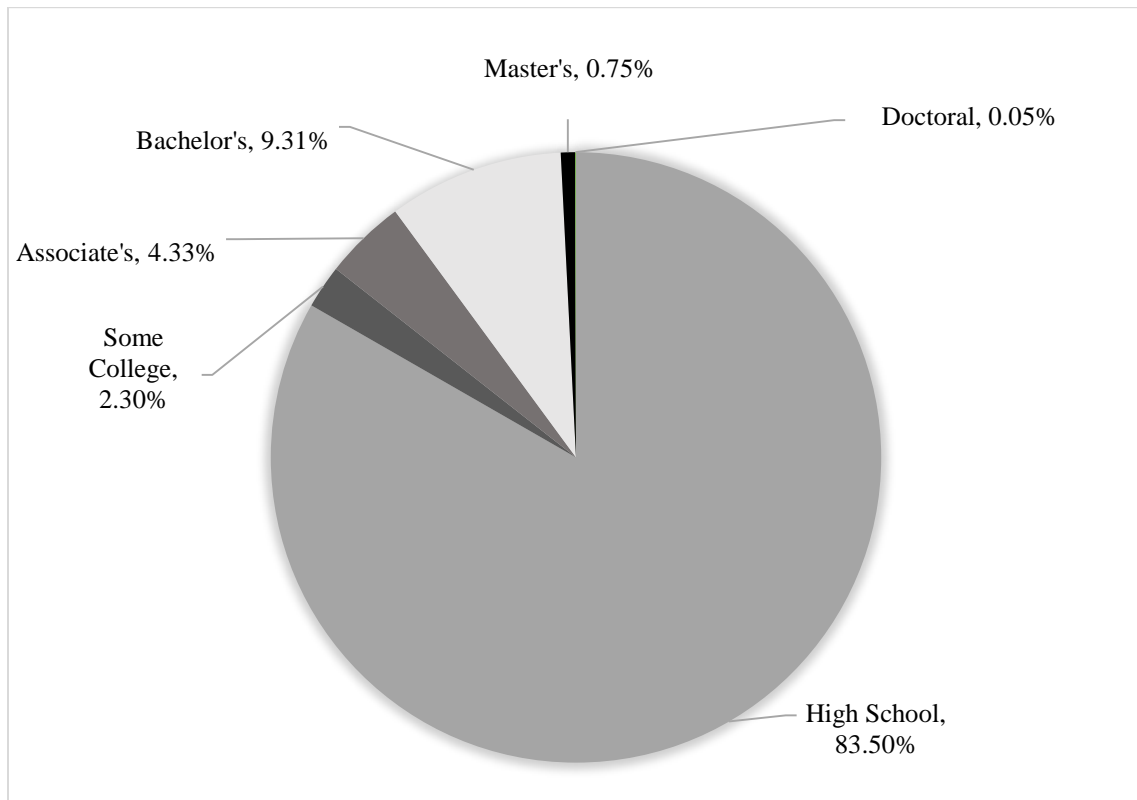


Figure 15. Academic degree attainment distribution within the junior-enlisted soldiers population serving in the U.S. RA. Total sample population, $N = 110,188$. Data were obtained from ITAPDB on September 30, 2019.

The data represented in Figure 16 describe the breakdown of the attainment of the academic degrees within the sample population of the U.S. Army junior-enlisted specialist in the RA based on race. The two largest racial categories were White and Black. Academic degree attainment across all race types was comparable, with high school or GED attainment being the most prevalent.

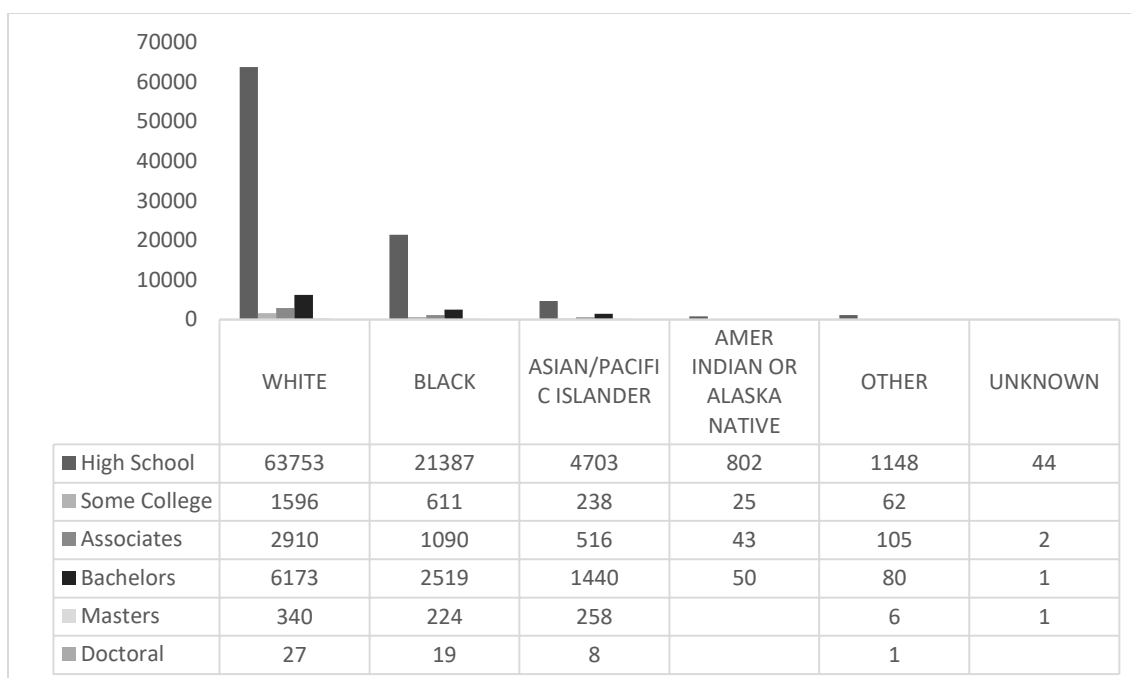


Figure 16. CivEd distribution within the junior-enlisted personnel in the rank of specialist in the U.S. RA by race. Total sample population, $N = 110,188$. Data were obtained from ITAPDB on September 30, 2019.

Because of the limitations of the GoArmyEd system and the dataset, the researcher could not review the entire picture regarding the degree attainment through TA. Per current U.S. Army VolEd Program policy, the EIs are not mandated to report the degree completions when they occur outside of GoArmyEd; therefore, the attained graduation data were incomplete and did not represent the fair sample.

In addition, the researcher was able to obtain information on only the U.S. Army soldiers in the rank of specialist in the RA dataset for the academic degree plan changes between the FY 2016 and FY 2019, meaning that any U.S. Army soldiers in the rank of specialist in the RA who had a degree plan or EI changes that occurred within the described above timeframe were recorded in the dataset. If the soldier completed a degree plan or changed EI in FY 2016 or earlier but never changed their EI or academic degree plan after FY 2016, the dataset did not include those education records. The

degree-change dynamics for the sample population were not available for this study due to the dataset limitations.

CivEd vs. GT Score by Gender

The researcher reviewed the sample population regarding the academic degree attainment by gender and determined that in the sample population male soldiers had the higher GT scores at every CivEd level, including high school or GED, associate's, bachelor's, master's, and doctoral degrees. The researcher's calculations showed that an average GT score for the entire sample, represented by the junior-enlisted soldiers in the rank of specialist serving in the RA, was 104.92. The average GT score for male soldiers in the sample set was 106.55, and the average GT score for female soldiers was 103.30. The results are presented in Figure 17.

The U.S. Army's AFCT or ASVAB Exam GT score consists of (1) word knowledge, (2) paragraph comprehension, and (3) arithmetic reasoning. The three categories of the ASVAB are critical not only for recruiting purposes, but also for measuring the relevant skills of military service regardless of MOS (DA, 2019d; DD, 2019a). The GT score of 110 is the desired entry score to the U.S. Army's career advancement and re-classification purposes (DA, 2018e). The U.S. Army is focused on GT score improvements through BSEP to ensure the total U.S. Army's readiness, reenlistment, and career advancement.

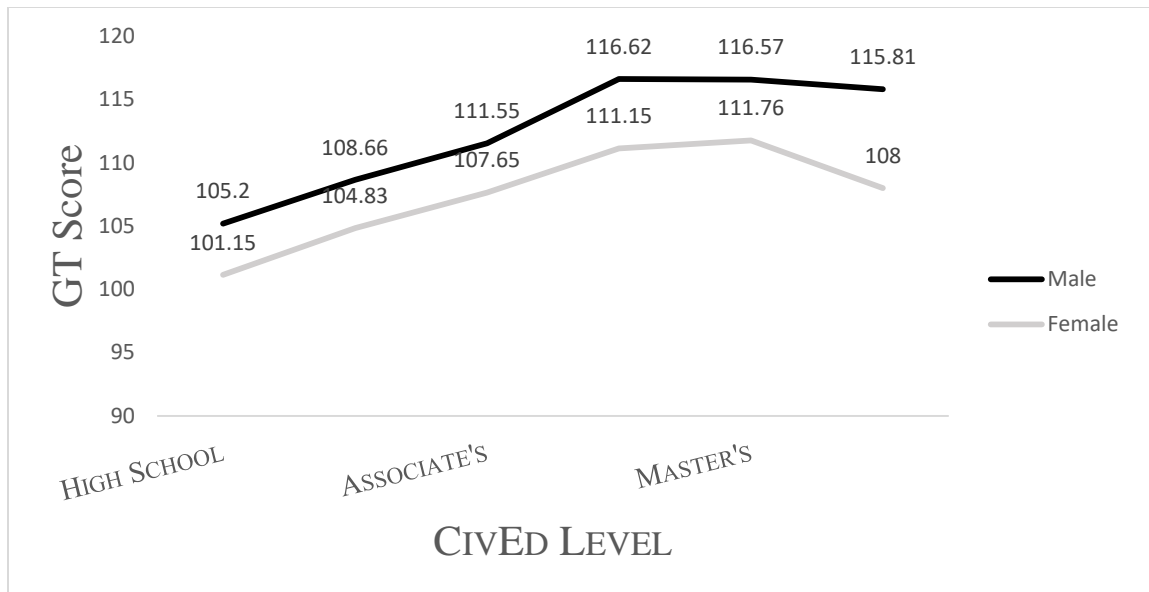


Figure 17. CivEd vs. GT score in specialist soldiers serving in the U.S. RA. Total sample population, $N = 110,188$; male soldiers, $n = 93,073$; female soldiers, $n = 17,115$. Data were obtained from ITAPDB on September 30, 2019.

CivEd level and the statistical mean of the GT score comparison for soldiers in the U.S. Army soldiers in the rank of specialist the serving in the RA are shown in Figure 17. The results make evident that a soldier's GT score increases as the CivEd level increases. The researcher's assumption was that the described dynamics are driven by the U.S. Army's focus on career progression and the education counselors' practicing counseling techniques and focus on GT score improvement discussed during the counseling sessions. Another reason for the trend was the U.S. Army's focus on career progression, which is tied to future promotions, indicated technically by grade or rank.

CivEd vs. TA GPA by Gender

The researcher reviewed the FY 2016 to FY 2019 dataset and identified 19,556 soldiers in the sample population who used TA for at least one class and had the TA GPA record in GoArmyEd. The researcher reviewed the TA GPA at the various CivEd levels for male and female soldiers in the rank of specialist serving in the RA as of September

30, 2019. The results of the analyses are presented in Table 5, indicating TA GPA by gender for specialists in the U.S. RA.

Table 5

TA GPA by Gender for E-4 Soldiers in the U.S. Regular Army

| CivEd | Male Soldiers | Female Soldiers |
|----------------------------|---------------|-----------------|
| High school diploma or GED | 2.31 | 2.42 |
| Some college | 2.56 | 2.65 |
| Associate's degree | 2.89 | 2.87 |
| Bachelor's degree | 3.18 | 3.23 |
| Master's degree | 3.55 | 3.45 |
| Doctoral degree | 3.56 | 3.30 |

Note. $N = 19,556$; male soldiers, $n = 15,428$; female soldiers, $n = 5,831$. Data were obtained from ITAPDB on September 30, 2019.

The researcher obtained a TA GPA from GoArmyEd, converted to a 4.0 scale with consideration of grades with “+” and “-”. The overall TA GPA for those soldiers was 2.43. For male soldiers ($n = 15,428$), overall TA GPA was 2.39; for female soldiers ($n = 5,831$), overall TA GPA was 2.52. The researcher factored only class passes or failures in the TA GPA calculations. The grades of incomplete, drops, and withdrawals were not considered. The limitations of the dataset prevented the researcher from specifying the undergraduate and graduate classes’ TA GPA and reviewing the differences. Table 5 shows that the soldier’s TA GPA increases with an increase in the CivEd level. The reason for this dynamic may have to do with the soldier’s maturity (age increase). Another reason for the dynamics between the TA GPA and the CivEd might be the U.S. Army VolEd program policies. The U.S. Army would recoup the TA funds if

the soldier earned a grade below “C” for undergraduate programs and below “B” for graduate academic programs (DA, 2019c).

GoArmyEd Accounts and Gender

“GoArmyEd is the U.S. Army’s enterprise VolEd portal that allows eligible soldiers to request Army TA for classroom and online learning courses anytime and from anywhere” (DA, 2019c, p. 12). Based on calculations, 79.14% of all male soldiers in the sample population obtained GoArmyEd accounts. This represented 73,658 male soldiers in the rank of specialist serving in the RA. The sample included 19,415 male soldiers who did not have a GoArmyEd account, which represented 20.86% of the entire male soldier population.

Female soldiers ($n = 15,125$) in the sample had GoArmyEd accounts, which represented 88.37%. Some females ($n = 1,990$) did not have the GoArmyEd account, which corresponded to 11.60% of the female soldiers in the sample. Figure 18 shows how the GoArmyEd accounts are distributed by gender.

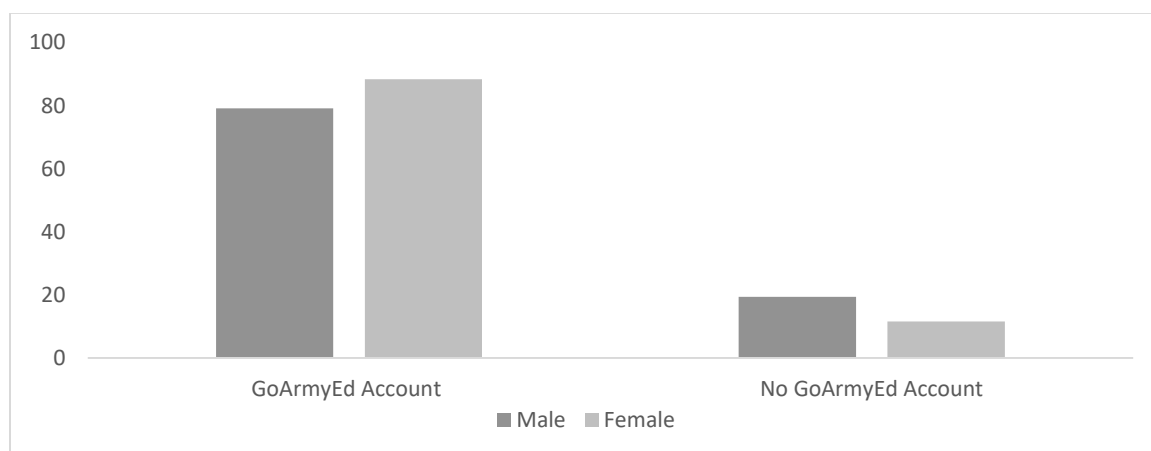


Figure 18. Sample population’s GoArmyEd accounts by gender. $N = 110,188$. Data were obtained from ITAPDB on September 30, 2019.

As shown in Figure 18, more female soldiers had GoArmyEd accounts than male soldiers in the sample population. It is essential to note that the soldiers' GoArmyEd account availability did not explain TA eligibility. However, since the sample population was represented by the soldiers in the rank of specialist, based on TA policy the researcher assumed the soldiers in the dataset were TA eligible based on their rank. At the time of the study, TA policy stated soldiers must meet the time-in-service and policy compliance, such as no military or academic holds before TA utilization.

These findings confirmed the assumption that the population of U.S. Army junior-enlisted soldiers in the rank of specialist in the RA was underserved in regard to academic degree completions and the TA usage aspect, requiring additional research of various variables and the interactions between them. Scanlan and Darkenwald (1984) stated that “understanding barriers is also essential to understanding the differences between participants and not participants” in VolEd Programs (as cited in Boeren, 2016, p. 55).

On September 30, 2019, the study data were provided to the researcher by the ACED systems branch through the internal government channels. No personal identification information (PII) was connected with the individuals within the data file provided to the researcher. The data were presented in a password-protected Excel format. The researcher coded the data in the Excel document as specified in Appendix G entitled Variables Coding in STATA. Also, the researcher converted the demographic and categorical variables into numerical variables as outlined in Appendices H, I, and J. Appendix F provides the definitions for the variables.

Research Questions

RQ1: Is there a difference in the TA usage in the U.S. Army junior-enlisted soldiers in the RA on Active Duty based on demographic factors (such as age, gender, marital status, ethnicity, and race)?

Null hypothesis: There are no significant differences in TA usage in the U.S. Army junior-enlisted soldiers in the RA on active duty based on demographic factors.

The researcher performed a correlation analysis to examine the relationship between the successful course enrollments in GoArmyEd, TA GPA; number of classes taken with TA; and the demographic variables of gender, marital status, age, race, and ethnicity. The researcher defined the successful course enrollment variable earlier as a combination of passes and failures.

This technique allowed the researcher to review the correlation coefficient to describe the strength and direction of the relationship between two variables. According to Ary, Jacobs, and Sorensen (2010), the “Pearson Product moment correlation coefficient indicates both the direction and the magnitude of the relationship between two variables without needing a scatterplot to show it” (p. 129). In this type of analysis, it is not essential to determine the independent and dependent variables. All variables were treated without weights. The results of the analyses are presented in Table 6, indicating the findings of significant correlations between the successful course enrollments and the demographic variables.

Table 6

Correlations between Successful Course Enrollments, TA GPA, and Demographic Factors

| | Gender | Age Category | Race | Ethnic Group | Marital Status | Passes | Failures | Drops | Withdrawal | Incomplete | TA GPA |
|------------|--------|-----------------|------|-----------------|-------------------|--------|----------|-------|------------|------------|-----------|
| Gender | 1.00 | | | | | | | | | | |
| Age | | | | | | | | | | | |
| Category | -0.05 | 1.00 | | | | | | | | | |
| Race | -0.14 | -0.11 | 1.00 | | | | | | | | |
| Ethnic | | | | | | | | | | | |
| Group | 0.00 | 0.03 | 0.09 | 1.00 | | | | | | | |
| Marital | | | | | | | | | | | |
| Status | 0.02 | 0.29 | 0.04 | 0.06 | 1.00 | | | | | | |
| Passes | 0.10 | 0.14 | 0.06 | 0.00 | 0.10 | 1.00 | | | | | |
| Failures | 0.02 | 0.00 | 0.41 | 0.38 | 0.03 | -0.14 | 1.00 | | | | |
| Drops | 0.10 | 0.08 | 0.08 | 0.01 | 0.04 | 0.31 | 0.06 | 1.00 | | | |
| Withdrawal | 0.08 | 0.09 | 0.09 | 0.01 | 0.04 | 0.19 | 0.03 | 0.30 | 1.00 | | |
| Incomplete | 0.02 | 0.01 | 0.13 | 0.01 | 0.01 | 0.00 | 0.00 | 0.11 | 0.01 | 1.00 | |
| TA GPA | 0.05 | 0.05 | 0.03 | -0.05 | 0.03 | 0.41 | -0.64 | 0.06 | 0.03 | 0.00 | 1.00 |

Note. $N = 19,259$.

According to Mertler and Vannatta, (2017), statistical significance refers to a decision made from the results of statistical procedures that enable researchers to conclude the findings of a study are large enough in the sample studied to represent a meaningful relationship in the population from which the sample was drawn. As shown in Table 6, there was one significant correlation for marital status, which was a weak, positive correlation. Marital status was significantly correlated with the soldier's age, $r = 0.29$, $N = 19,259$, $p < 0.01$. The coefficient of determination indicated marital status explained 8.40% of the variance in soldier's age.

One-way analysis of variance, or ANOVA, was appropriate to address the first research question to determine to what extent the TA usage was affected by the various demographical factors of race, gender, marital status, birth year, and ethnicity (Gall et al., 2007). Table 7 presents ANOVA results and descriptive statistics for TA GPA and passes of U.S. Army soldiers in the rank of specialist serving in RA by age.

Table 7

ANOVA Results and Descriptive Statistics for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by Age

| Outcome | Group | | | | | | Sig |
|-------------|-----------|-----------|-----------|----------|-----------|----------|-----------------|
| | TA GPA | | | Passes | | | |
| Age | <i>M</i> | <i>SD</i> | <i>N</i> | <i>M</i> | <i>SD</i> | <i>N</i> | |
| 18-21 | 2.41 | 1.37 | 3,870 | 1.89 | 2.10 | 4,523 | <i>p</i> < 0.05 |
| 22-25 | 2.36 | 1.34 | 9,356 | 2.34 | 2.78 | 10,854 | |
| 26-29 | 2.49 | 1.31 | 4,076 | 2.73 | 3.21 | 4,785 | |
| 30 or older | 2.67 | 1.28 | 1,957 | 3.09 | 3.61 | 2,256 | |
| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | | | |
| Group TA | | | | | | | |
| GPA | 174.65 | 3 | 58.22 | 32.62 | | | |
| Error TA | | | | | | | |
| GPA | 34,359.13 | 19,255 | 1.78 | | | | |
| Group | | | | | | | |
| Passes | 2,773.86 | 3 | 924.62 | 113.36 | | | |
| Error | | | | | | | |
| Passes | 182,822 | 22,414 | 8.16 | | | | |

Note. $p < 0.05$.

As seen in Table 7, use of ANOVA to respond to the first research question assumed a normal distribution of the dependent variables for each subgroup, equality of variance for the dependent variable for all populations. The individual cases were random and independent. There was a statistically significant difference between groups determined by one-way ANOVA. Soldier's age had a statistically significant difference on TA GPA, $F(3, 19,255) = 32.62, p < 0.05$.

A Scheffe post hoc comparison showed that not all age category comparisons were statistically significant. The comparison of the soldiers' ages 22 to 25, 26 to 29, and 30+ categories were statistically significant at the $p < 0.05$ level. However, the 18-21 soldier age category was significant only at the $p < 0.05$ level when compared to the 30+ age category. When compared to the 22 to 25 or the 26 to 29 soldier age categories, the 18-21 category was not statistically significant. The age had a statistically significant

difference on passes, $F(3, 22,414) = 113.36, p = < 0.05$. Also, a Scheffe post hoc comparison showed that all age categories were statistically significant when comparing the age category influence on passes. Table 8 presents ANOVA results and descriptive statistics for TA GPA and passes of U.S. Army soldiers in the rank of specialist serving in RA by gender.

Table 8

ANOVA Results and Descriptive Statistics for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by Gender

| Outcome | Group | | | | | |
|--------------|------------|-----------|-----------|----------|-----------|----------|
| | TA GPA | | | Passes | | |
| Gender | <i>M</i> | <i>SD</i> | <i>N</i> | <i>M</i> | <i>SD</i> | <i>N</i> |
| Male | 2.39 | 1.37 | 13,428 | 2.21 | 2.74 | 15,828 |
| Female | 2.52 | 1.26 | 5,831 | 2.88 | 3.13 | 6,590 |
| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | | |
| Group TA GPA | 77.78 | 1.00 | 77.78 | 43.47 | | |
| Error TA GPA | 34,456.18 | 19,257 | 1.79 | | | |
| Group Passes | 2,098.42 | 1 | 2098.42 | 256.34 | | |
| Error Passes | 183,497.89 | 22,416 | 8.19 | | | |

Note. $p < 0.05$.

As shown in Table 8, soldier's gender had a significant impact on TA GPA, $F(1, 19,257) = 43.47, p < 0.05$. A Scheffe post hoc comparison showed that the difference between males and females was statistically significant. Soldier's gender had a significant impact on passes, $F(1, 22,416) = 256.34, p < 0.05$. Also, a Scheffe post hoc comparison showed the difference between males and females was statistically significant. Table 9 presents ANOVA results and descriptive statistics for TA GPA and class passes of U.S. Army soldiers in the rank of specialist serving in RA by marital status.

Table 9

ANOVA Results and Descriptive Statistics for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by Marital Status

| Outcome | Group | | | | | |
|--------------|------------|-----------|-----------|----------|-----------|----------|
| | TA GPA | | | Passes | | |
| Gender | <i>M</i> | <i>SD</i> | <i>N</i> | <i>M</i> | <i>SD</i> | <i>N</i> |
| Married | 2.39 | 1.36 | 9,817 | 2.15 | 2.56 | 11,504 |
| Single | 2.47 | 1.31 | 9,442 | 2.68 | 3.16 | 10,914 |
| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | | |
| Group TA | | | | | | |
| GPA | 34,15.78 | 1 | 34.15 | 19.06 | | |
| Error TA | | | | | | |
| GPA | 34,499.81 | 19,257 | 1.79 | | | |
| Group | | | | | | |
| Passes | 1,571.02 | 1 | 1571.02 | 191.37 | | |
| Error Passes | 184,025.26 | 22,416 | 8.21 | | | |

Note. $p < 0.05$.

As shown in Table 9, soldiers' marital status had a significant impact on TA GPA, $F(1, 19,257) = 19.06, p < 0.05$. A Scheffe post hoc comparison showed the difference between married and single soldiers was statistically significant. Soldier's marital status had a significant impact on passes, $F(1, 22,416) = 191.37, p < 0.05$. Also, a Scheffe post hoc comparison showed that the difference between married and single soldiers was statistically significant.

Soldier's ethnicity had a significant impact on TA GPA, $F(21, 19,237) = 8.16, p < 0.05$. Also, a Scheffe post hoc comparison showed the difference between the Korean ethnic category was statistically significant when compared to the Filipino, Puerto Rican, other Hispanic decent, other, and non-ethnic categories. Also, the other ethnic category was statistically significant when compared to Chinese and other Asian descent ethnic categories. All other ethnic categories were not statistically significant.

Soldier's ethnicity had a significant impact on passes, $F(21, 22,396) = 11.59$, $p < 0.05$. A Scheffe post hoc comparison showed the difference between the other ethnic category was statistically significant when compared to the Mexican, Puerto Rican, and non-ethnic categories. Also, the Korean ethnic category was statistically significant when compared to the Mexican ethnic category. All other ethnic categories were not statistically significant.

Soldier's race had a significant impact on TA GPA, $F(5, 19,253) = 42.59$, $p < 0.05$. A Scheffe post hoc comparison showed the difference between the Asian/Pacific Islander racial category was statistically significant when compared to the White, Black, and other racial categories. Also, the Black racial category was statistically significant when compared to the White racial category. All other racial categories were not statistically significant.

Soldier's race had a significant impact on passes, $F(5, 22,412) = 15.93$, $p < 0.05$. A Scheffe post hoc comparison showed the difference between the White racial category was statistically significant when compared to the Asian/Pacific Islander, and Black racial categories. All other racial categories were not statistically significant.

As a result of these findings, the researcher failed to reject the null hypothesis when combining all demographic variables as a group for the first research question. However, the researcher rejected the null hypothesis when examining the demographic variables individually.

RQ2: Does the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA differ based on military service-related factors (such as MOS, CMF, PEBD, age into the army, and number of years in service)?

Null hypothesis: There are no significant differences in TA usage in the U.S. Army junior-enlisted soldiers in the RA on active duty based on military service-related factors. The researcher performed a correlation analysis to examine the relationships between the successful course enrollment, TA GPA, and the military service-related variables, to include MOS, CMF, PEBD, age into the army, and number of years in service. The results of the analyses are presented in Table 10, indicating there were no significant correlations between the successful course enrollments and the military service-related variables.

Correlations between Successful Course Enrollment, CivEd, and Military Service-Related Variables (PEBD, Age into the Army, Number of Years in Service, and CM

| | Passes | Failures | Drops | Withdrawal | Incomplete | TA GPA | Age in the Army | MOS | CMF | PEBD | Number of Years in Service |
|----------------------------------|--------|----------|-------|------------|------------|--------|--------------------|-------|------|-------|----------------------------------|
| Passes | 1.00 | | | | | | | | | | |
| Failures | -0.14 | 1.00 | | | | | | | | | |
| Drops | 0.31 | 0.06 | 1.00 | | | | | | | | |
| Withdrawals | | | | | | | | | | | |
| | 0.19 | 0.03 | 0.30 | 1.00 | | | | | | | |
| Incompletes | 0.00 | -0.01 | 0.01 | 0.01 | 1.00 | | | | | | |
| TA GPA | 0.41 | -0.64 | 0.06 | 0.03 | 0.00 | 1.00 | | | | | |
| Age into the | | | | | | | | | | | |
| Army | 0.10 | -0.05 | 0.05 | 0.05 | 0.00 | 0.10 | 1.00 | | | | |
| MOS | 0.06 | 0.02 | 0.04 | 0.05 | 0.01 | 0.00 | 0.06 | 1.00 | | | |
| CMF | 0.07 | 0.02 | 0.04 | 0.05 | 0.01 | 0.00 | 0.07 | 0.99 | 1.00 | | |
| PEBD | -0.12 | -0.10 | -0.08 | -0.11 | -0.01 | 0.07 | 0.08 | -0.01 | 0.01 | 1.00 | |
| Number of Years in Service | 0.12 | 0.10 | 0.08 | 0.11 | 0.01 | -0.07 | -0.08 | 0.01 | 0.01 | -1.00 | 1.00 |

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The significant correlations between successful course enrollments and the military service-related variables were not identified. Even though the correlations between drops and passes, withdrawals and drops, and TA GPA and failures existed, they were expected interactions between the variables. As soldiers took additional classes, the likelihood of correlations increased.

One-way ANOVA was appropriate to address the second research question to determine if the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA differed based on military service-related factors such as MOS, CMF, PEBD, age into the army, and number of years in service. Use of ANOVA to respond to the second research question assumed normal distribution of the dependent variables for each subgroup, equality of variance for the dependent variable for all populations, and individual cases, were random and independent. Table 11 presents ANOVA results for TA GPA and passes of U.S. Army soldiers in the rank of specialist serving in RA by MOS.

Table 11

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by MOS

| Source | SS | df | MS | F |
|--------------|------------|--------|-------|------|
| Group TA GPA | 1,049.97 | 136 | 7.72 | 4.41 |
| Error TA GPA | 33,484.98 | 19,122 | 1.75 | |
| Group Passes | 6,965.54 | 136 | 51.21 | 6.39 |
| Error Passes | 178,630.74 | 22,281 | 8.02 | |

Note. $p < 0.05$.

As shown in Table 11, soldier's MOS had a significant impact on TA GPA, $F(136, 19,122) = 4.41, p < 0.05$. In addition, a Scheffe post hoc comparison showed the difference between all MOS categories was not statistically significant. Soldier's MOS

had a significant impact on passes, $F(136, 22,281) = 6.39, p < 0.05$. A Scheffe post hoc comparison showed the difference between all MOS categories was not statistically significant. Table 12 shows ANOVA results for TA GPA and passes of U.S. Army soldiers in the rank of specialist serving in RA by CMF.

Table 12

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by CMF

| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
|--------------|------------|-----------|-----------|----------|
| Group TA GPA | 5.01 | 24 | 24.79 | 14.05 |
| Error TA GPA | 3,938.95 | 19,234 | 1.76 | |
| Group Passes | 4,019.36 | 24 | 167.47 | 20.65 |
| Error Passes | 181,576.92 | 22,393 | 8.11 | |

Note. $p < 0.05$.

As shown in Table 12, soldier's CMF had a significant impact on TA GPA, $F(24, 19,234) = 14.05, p < 0.05$. Also, a Scheffe post hoc comparison showed the 35 CMF category was statistically significant when compared to the 11, 13, 19, 25, 31, 42, 88, 91, and 92 CMF categories. Also, the 31 CMF category was statistically significant when compared to the 15, 68, and 92 CMF categories. The 68 CMF category was statistically significant when compared to the 25, 91, and 92 CMF categories. All other CMF categories were not statistically significant.

Soldier's CMF had a significant impact on passes, $F(24, 22,393) = 20.65, p < 0.05$. A Scheffe post hoc comparison showed the 68 CMF category was statistically significant when compared to the 11 through 15, 19, 25, 31, 35, 88, 91, and 92 CMF categories. Also, the 11 CMF category was statistically significant when compared to the 42 and 92 CMF categories. The 19 CMF category compared to the 42 CMF category was statistically significant. All other CMF categories were not statistically significant.

Table 13 presents ANOVA results for TA GPA and class passes of U.S. Army soldiers in the rank of specialist serving in RA by PEBD.

Table 13

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by PEBD

| Source | SS | df | MS | F |
|--------------|------------|--------|--------|-------|
| Group TA GPA | 185.96 | 16 | 11.62 | 6.51 |
| Error TA GPA | 34,347.99 | 19,242 | 1.79 | |
| Group Passes | 3,914.24 | 17 | 230.25 | 28.39 |
| Error Passes | 181,682.05 | 22,400 | 8.11 | |

Note. $p < 0.05$.

As shown in Table 13, soldier's PEBD had a significant impact on TA GPA, $F(16, 19,242) = 6.51, p < 0.05$. Also, a Scheffe post hoc comparison showed the 2015 PEBD category was statistically significant when compared to the 2017 PEBD category. All other PEBD categories were not statistically significant.

Soldier's PEBD had a significant impact on passes, $F(17, 22,400) = 28.39, p < 0.05$. A Scheffe post hoc comparison showed the 2016 PEBD category was statistically significant when compared to the 2012, 2013, 2014, and 2015 PEBD categories. Also, the 2017 PEBD category was statistically significant when compared to the 2012, 2013, 2014, 2015, and 2016 PEBD categories. In addition, the 2018 PEBD category was statistically significant when compared to the following PEBD years: 2009, 2012, 2013, 2014, 2015, and 2016. All other PEBD categories were not statistically significant. Table 14 presents ANOVA results for TA GPA and class passes of U.S. Army soldiers in the rank of specialist serving in RA by age into the Army.

Table 14

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by Age into the Army

| Source | SS | df | MS | F |
|--------------|------------|--------|-------|-------|
| Group TA GPA | 411.62 | 22 | 18.71 | 10.55 |
| Error TA GPA | 34,122.34 | 19,236 | 1.77 | |
| Group Passes | 1,500.04 | 23 | 65.22 | 7.93 |
| Error Passes | 184,096.28 | 22,394 | 8.22 | |

Note. $p < 0.05$.

As shown in Table 14, soldier's age into the army had a statistically significant impact on TA GPA, $F(22, 19,236) = 10.55, p < 0.05$. A Scheffe post hoc comparison showed the category of age 20 into the army was statistically significant when compared to the 24 and 29 age categories. All other age into the army categories were not statistically significant. Soldier's age into the army had a significant impact on passes, $F(23, 22,394) = 7.93, p < 0.05$. Also, a Scheffe post hoc comparison showed that none of the age into the army categories were statistically significant. Table 15 presents ANOVA results for TA GPA and class passes of U.S. Army soldiers in the rank of specialist serving in RA by years in service.

As shown in Table 15, soldier's years in service on the day of the research had a significant impact on TA GPA, $F(16, 19,242) = 6.51, p < 0.05$. A Scheffe post hoc comparison showed the soldier's two years in service category was statistically significant when compared to soldier's four years in service category. All other soldier's years in service categories were not statistically significant.

Table 15

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by Years in Service

| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
|--------------|------------|-----------|-----------|----------|
| Group TA GPA | 185.96 | 16 | 11.62 | 6.51 |
| Error TA GPA | 34,347.99 | 19,242 | 1.79 | |
| Group Pass | 3,914.24 | 17 | 230.25 | 28.39 |
| Error Pass | 181,682.05 | 22,400 | 8.11 | |

Note. $p < 0.05$.

Soldier's years in service on the day of the research had a significant impact on passes, $F(17, 22,400) = 28.39, p < 0.05$. Also, a Scheffe post hoc comparison showed the soldier's first year in service category was statistically significant when compared to the soldier's third, fourth, fifth, sixth, seventh, and 10th years in service categories. In addition, the soldier's second year in service category was statistically significant when compared to the soldier's fourth, fifth, sixth, and seventh years in service categories. Also, the soldier's third year in service category was statistically significant when compared to the soldier's fourth, fifth, sixth, and seventh years in service categories. All other soldier's years in service categories were not statistically significant.

As a result, the researcher failed to reject the null hypothesis when combining all military service-related variables as a group for the second research question. However, the researcher rejected the null hypothesis when examining the military service-related variables individually.

RQ3: To what extent do the educational factors (GT score, CivEd, BSEP, cumulative total of classes taken with TA) affect the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA?

Null hypothesis: There are no significant differences in TA usage in the U.S.

Army junior-enlisted soldiers in the RA on active duty based on educational factors.

The researcher explored the Pearson's correlation among the educational variables, such as successful course enrollments, unsuccessful course enrollments, TA GPA, GT score, CivEd, BSEP, total of classes taken with TA, to understand better correlation within the group. The results of the analyses presented in Table 16 indicate no significant correlations were found.

The Pearson Correlation test did not reveal any strong correlations between single variables that were not already expected. More comprehensive research was conducted by performing a one-way ANOVA to better understand the dynamics and interaction between the educational variables. Use of ANOVA to respond to the third research question assumed normal distribution of the dependent variables for each subgroup, equality of variance for the dependent variable for all populations, and individual cases were random and independent.

Table 16

Pearson's Correlation among the Education Variables

| | Passes | Failures | Drops | Withdrawals | Incompletes | TA GPA | GPA Class Count | BSEP Completed | CivEd | GT Score |
|-----------------|--------|----------|-------|-------------|-------------|--------|-----------------|----------------|-------|----------|
| Passes | 1.00 | | | | | | | | | |
| Failures | -0.12 | 1.00 | | | | | | | | |
| Drops | 0.30 | 0.10 | 1.00 | | | | | | | |
| Withdrawals | 0.17 | 0.07 | 0.30 | 1.00 | | | | | | |
| Incompletes | 0.00 | -0.01 | -0.01 | 0.00 | 1.00 | | | | | |
| TA GPA | 0.40 | -0.63 | 0.03 | 0.01 | -0.1 | 1.00 | | | | |
| GPA class count | 0.95 | 0.19 | 0.33 | 0.19 | 0.00 | 0.21 | 1.00 | | | |
| BSEP completed | 0.07 | -0.02 | 0.02 | 0.01 | 0.01 | 0.05 | 0.06 | 1.00 | | |
| CivEd | 0.21 | -0.07 | 0.05 | 0.01 | -0.01 | 0.15 | 0.19 | 0.02 | 1.00 | |
| GT Score | 0.14 | -0.05 | 0.03 | 0.02 | -0.03 | 0.16 | 0.12 | 0.14 | 0.14 | 1.00 |

Note. $N = 19,259$.

The results of the analyses presented in Table 17 illustrate *ANOVA* results for TA GPA and class passes of U.S. Army soldiers in the rank of specialist serving in RA by GPA class count.

Table 17

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by GPA Class Count

| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
|--------------|------------|-----------|-----------|----------|
| Group TA GPA | 1,645.87 | 31 | 53.09 | 31.04 |
| Error TA GPA | 32,888.09 | 19,227 | 1.71 | |
| Group Pass | 146,708.53 | 31 | 4,732.53 | 5,169.49 |
| Error Pass | 17,601.82 | 19,227 | 0.91 | |

Note. $p < 0.05$.

As shown in Table 17, soldier's GPA class count had a significant impact on TA GPA, $F(31, 19,227) = 31.04, p < 0.05$. Also, a Scheffe post hoc comparison showed the GPA class count category was statistically significant when compared to the 3 through 11 GPA class count categories. The GPA class count category 2 was statistically significant when compared to the 3 through 11 GPA class count categories. Also, the GPA class count category 3 was statistically significant when compared to the GPA class count categories 7 through 9. All other GPA class count categories were not statistically significant.

Soldier's GPA class count had a significant impact on passes, $F(31, 4,732.53) = 5,169.49, p < 0.05$. Also, a Scheffe post hoc comparison showed the GPA class count category 0 was statistically significant when compared to the 1 through 29 and 32 GPA categories. The GPA class count category 1 was statistically significant when compared to the 2 through 29, 31, and 33 GPA categories. Also, the GPA class count category 2 was statistically significant when compared to the 3 through 29, 31, and

33 GPA categories. The GPA class count category 3 was statistically significant when compared to the 4 through 29, 31, and 33 GPA categories. The GPA class count category 4 was statistically significant when compared to the 5 through 29, 31, and 33 GPA categories. The GPA class count category 5 was statistically significant when compared to the 6 through 29, 31, and 33 GPA categories. The GPA class count category 6 was statistically significant when compared to the 7 through 29, 31, and 33 GPA categories. The GPA class count category 7 was statistically significant when compared to the 8 through 29, 31, and 33 GPA categories. The GPA class count category 8 was statistically significant when compared to the 9 through 29, 31, and 33 GPA categories. The GPA class count category 9 was statistically significant when compared to the 10 through 29, 31, and 33 GPA categories. The GPA class count category 10 was statistically significant when compared to the 11 through 29, 31, and 33 GPA categories. The GPA class count category 11 was statistically significant when compared to the 12 through 29, 31, and 33 the GPA categories. The GPA class count category 12 was statistically significant when compared to the 13 to 29, 31, and the 33 GPA categories. The GPA class count category 13 was statistically significant when compared to the 15 to 29, 31, and 33 GPA categories. The GPA class count category 14 was statistically significant when compared to the 17 to 29, 31, and 33 GPA categories. The GPA class count category 15 was statistically significant when compared to the 17, 18, 20 to 29, 31, and 33 GPA categories. The GPA class count category 16 was statistically significant when compared to the GPA class count categories 17, 18, 20 through 29, 31, and 33 GPA categories. The GPA class count category 17 was statistically significant when compared to the 20, 21, 22, 24 to 29, 31, and 33 was GPA categories. The GPA class count category 18 was

statistically significant when compared to the 21, 25 through 29, 31, and 33 GPA categories. The GPA class count category 19 was statistically significant when compared to the 21, 25 through 29, and 31 GPA categories. The GPA class count category 20 was statistically significant when compared to the 26 through 29, 31, and 33 GPA categories. The GPA class count categories 21, 22, and 23 were statistically significant when compared individually to the 27 through 29, 31, and 33 GPA categories respectively. The GPA class count categories 24 and 25 were statistically significant when compared individually to the 33 GPA category. All other GPA class count categories were not statistically significant. The results of the analyses presented in Table 18 demonstrate *ANOVA* results for TA GPA and class passes of U.S. Army soldiers in the rank of specialist serving in RA by BSEP completion.

Table 18

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by Completed BSEP

| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
|--------------|-----------|-----------|-----------|----------|
| Group TA GPA | 43.97 | 16 | 2.75 | 1.71 |
| Error TA GPA | 7,312.25 | 4,542 | 1.61 | |
| Group Pass | 457.64 | 17 | 26.92 | 2.56 |
| Error Pass | 54,673.19 | 5,196 | 10.52 | |

Note. $p < 0.05$.

As shown in Table 18, the completion of the BSEP classes had a significant impact on TA GPA, $F(16, 4,542) = 1.71, p < 0.05$. Also, a Scheffe post hoc comparison showed no categories that were statistically significant. Soldier's completion of the BSEP classes had a significant impact on passes, $F(17, 5,196) = 2.56, p < 0.05$. Also, a Scheffe post hoc comparison showed no categories that were statistically significant. The results of the analyses presented in Table 19 reveal *ANOVA* results for TA GPA and class

passes of U.S. Army soldiers in the rank of specialist serving in RA by civilian education level.

Table 19

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by CivEd

| Source | SS | df | MS | F |
|--------------|------------|--------|----------|--------|
| Group TA GPA | 929.88 | 5 | 185.98 | 106.55 |
| Error TA GPA | 33,604.07 | 19,253 | 1.75 | |
| Group Pass | 8,494.61 | 5 | 1,698.92 | 215 |
| Error Pass | 177,101.67 | 22,412 | 7.90 | |

Note. $p < 0.05$.

As shown in Table 19, soldier's CivEd had a significant impact on TA GPA, $F(5, 19,253) = 106.55, p < 0.05$. A Scheffe post hoc comparison showed the high school/GED CivEd category was statistically significant when compared to the CivEd categories of (1) some college, (2) associate's or less than bachelor's, (3) bachelor's, and (4) master's or post-master's but less than doctorate. Also, some college (at least three semester hours completed, but less than the associate's CivEd category) was statistically significant compared to the following: (1) associate's or less than bachelor's, (2) bachelor's, and (3) master's or post-master's but less than doctorate CivEd categories. The associate's or less than bachelor's CivEd category was statistically significant when compared to the bachelor's and master's or post-master's, but less than doctorate CivEd categories. All other CivEd categories were not statistically significant.

Soldier's CivEd had a significant impact on passes, $F(5, 22,412) = 215.00, p < 0.05$. In addition, a Scheffe post hoc comparison showed the high school/GED CivEd category was statistically significant when compared to the CivEd categories of (1) some college, (2) associate's or less than bachelor's, (3) bachelor's, and (4) master's

or post-master's but less than doctorate CivEd categories. Also, some college (at least three semester hours completed but less than associate's CivEd category) was statistically significant when compared to (1) associate's or less than bachelor's, (2) bachelor's, and (3) master's or post-master's but less than doctorate CivEd categories. The associate's or less than bachelor's CivEd category was statistically significant when compared to the bachelor's CivEd category. All other CivEd categories were not statistically significant. The results of the analyses presented in Table 20 show *ANOVA* results for TA GPA and class passes of U.S. Army soldiers in the rank of specialist serving in RA by GT score.

Table 20

ANOVA Results for TA GPA and Passes of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by GT Score

| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
|--------------|------------|-----------|-----------|----------|
| Group TA GPA | 958.39 | 74 | 12.95 | 7.40 |
| Error TA GPA | 33,525.03 | 19,157 | 1.75 | |
| Group Pass | 2,112.21 | 74 | 28.54 | 3.48 |
| Error Pass | 183,172.72 | 22,313 | 8.21 | |

Note. $p < 0.05$.

As shown in Table 20, soldier's GT score had a significant impact on TA GPA, $F(74, 19,157) = 7.40, p < 0.05$. However, the Scheffe post hoc comparison showed all GT score categories were not statistically significant. Soldier's GT score had a statistically significant impact on passes, $F(74, 22,313) = 3.48, p < 0.05$. However, the Scheffe post hoc comparison showed all GT score categories were not statistically significant.

As a result, the researcher failed to reject the null hypothesis when combining all educational variables as a group for the third research question. However, the researcher rejected the null hypothesis when examining the educational variables individually.

Additional Research Considerations

Between-Group Covariance

The researcher performed the Pairwise Correlations to review the correlations between all available combinations of variables within the sample. CivEd showed the correlation with soldier's age and both the current age and the age into the army.

CivEd was statistically significantly correlated with soldier's current age on the day of research, $r = 0.41$, $N = 110,188$, $p < 0.01$. The coefficient of determination indicated 17% of the variance in soldier's age was explained by CivEd. CivEd was statistically significantly correlated with the age into the army, $r = 0.52$, $N = 110,188$, $p < 0.01$. The coefficient of determination indicated 27.44% of the variance in the age into the army was explained by CivEd. Both findings were expected outcomes because of the U.S Army's policy, which encourages educational obtainment and degree progression (DA, 2019c).

The pairwise data also were examined within the CMF categories. For the 09 CMF category, marital status and GT score were statistically significantly correlated, $r = -0.25$, $n = 447$, $p < 0.01$. For the 19 CMF category, race and GT score were statistically significantly correlated, $r = 0.21$, $n = 4,606$, $p < 0.01$. For the 25 CMF category, race and GT score were statistically significantly correlated, $r = 0.22$, $n = 8,631$, $p < 0.01$. For the 27 CMF category, gender and GT score were statistically significantly correlated, $r = -0.23$, $n = 439$, $p < 0.01$. For the 42 CMF category, race and GT score were statistically significantly correlated, $r = 0.28$, $n = 3,271$, $p < 0.01$. For the 46 CMF category, marital status and gender were statistically significantly correlated,

$r = 0.27, n = 65, p < 0.01$. For the 56 CMF category, race and GT score were statistically significantly correlated, $r = 0.27, n = 368, p < 0.01$. For the 89 CMF category, race and GT score were statistically significantly correlated, $r = 0.29, n = 1,013, p < 0.01$.

These findings demonstrate there was no preset group of variables that could have been universally applied to all RA soldiers in the rank of specialist. Although GT score and race were prevalent for specific CMF groupings, further research is needed to gain further insight into variables and factors that impact VolEd participation. It is possible there may have been undiscovered factors within CMF groupings which could have affected TA participation outcomes.

The researcher conducted the Pairway Correlations to explore possible significant correlations by age and CMF. The pairwise data also were examined within the age groupings. For the age category 0, represented by 18-21-year-old soldiers, the date of birth and PEBD variables were significantly correlated, $r = 0.46, n = 25,072, p < 0.01$. The DOB was statistically significantly correlated with the following variables: (1) age into the army, $r = -0.29, n = 25,072, p < 0.01$; (2) soldier's current age, $r = -0.85, n = 25,072, p < 0.01$; and (3) number of years in service, $r = -0.46, n = 25,072, p < 0.01$.

The age into the army variable was statistically significantly correlated with the following: (1) the soldier's current age, $r = 0.62, n = 25,072, p < 0.01$; and (2) number of years in service, $r = -0.62, n = 25,072, p < 0.01$. The TA GPA variable was statistically significantly correlated with the following: (1) failures $r = -0.67, n = 3,870, p < 0.01$; and (2) passes, $r = 0.46, n = 3,870, p < 0.01$. Also, the researcher recorded the statistically significant correlation of passes and GPA class count, $r = 0.91, n = 3,870, p < 0.01$.

The TA usage and passes were statistically significantly correlated as well, $r = 0.37$, $n = 3,870$, $p < 0.01$.

For the age category 1, which included soldier's age between 22 and 25, the CivEd variable was statistically significantly correlated with the PEBD, $r = 0.38$, $n = 52,154$, $p < 0.01$; the age into the army, $r = 0.47$, $n = 52,154$, $p < 0.01$; and the number of years in service, $r = -0.38$, $n = 52,154$, $p < 0.01$. The GPA class count variable was statistically significantly correlated with the following: (1) drops, $r = 0.32$, $n = 9,356$, $p < 0.01$; and (2) passes, $r = 0.93$, $n = 9,356$, $p < 0.01$. The TA usage and passes variables were statistically significantly correlated, $r = 0.34$, $n = 10,854$, $p < 0.01$. The TA GPA and failures variables were statistically significantly correlated, $r = -0.63$, $n = 9,356$, $p < 0.01$. In addition, the statistically significant correlation between DOB and age into the army was recorded, $r = -0.56$, $n = 52,156$, $p < 0.01$.

For age category 2, represented by soldiers ages 26-29, the CivEd variable was statistically significantly correlated with the following: (1) PEBD, $r = 0.39$, $n = 22,257$, $p < 0.01$; (2) age into the army, $r = 0.40$, $n = 22,257$, $p < 0.01$; and (3) GT score, $r = 0.30$, $n = 22,187$, $p < 0.01$. TA usage and passes were statistically significantly correlated, $r = 0.35$, $n = 4,785$, $p < 0.01$. GoArmyEd account presence and number of years in service were statistically significantly correlated, $r = 0.26$, $n = 22,259$, $p < 0.01$. TA GPA and failures were statistically significantly correlated, $r = -0.63$, $n = 9,356$, $p < 0.01$.

For age category 3, described by soldiers in the sample population in age 30 and older, the CivEd was statistically significantly correlated with (1) PEBD, $r = 0.33$, $n = 10,697$, $p < 0.01$; (2) age into the army, $r = 0.32$, $n = 10,697$, $p < 0.01$; (3) number of years in service, $r = -0.33$, $n = 10,697$, $p < 0.01$; (4) GT score, $r = 0.22$, $n = 10,672$,

$p < 0.01$; and (5) TA GPA, $r = 0.23$, $n = 1,957$, $p < 0.01$. MOS and race were statistically significantly correlated, $r = -0.24$, $n = 10,699$, $p < 0.01$.

Overall, findings of the Pairway Correlations demonstrated two essential findings. First, the soldier's age and GT score were statistically significantly correlated. Second, the soldier's age and the CivEd were statistically significantly correlated. These findings were expected based on the current U.S. Army's policy and fell within the expected norm when reviewing the dataset. As a soldier progressed in their career, their GT score and CivEd level were expected to increase as well.

Quantitative Comparisons of Two Groups

This study included quantitative comparisons of group means of the U.S. Army enlisted soldiers in the rank of specialist serving in the Regular Army. For this purpose, the researcher compared two groups of soldiers. The first group was comprised of the soldiers' dataset population who were actively pursuing the VolEd opportunities using TA and who successfully completed at least one credit hour between FY 2016 and FY 2019. The second group was represented by soldiers who did not take any EI courses using TA. A causal-comparative research design was suitable for such explorations for comparing quantitative means for a given dependent variable among groups based on the independent variable (Gall et al., 2007). This procedure was appropriate to investigate whether the group of soldiers from the RA enlisted soldiers in the rank of specialist differed significantly from their counterparts who were not engaged in VolEd.

The research used one-way ANOVA to test for differences between the groups of soldiers who used TA and those who did not. The measures of the three RQs included demographic, educational, and military service-related factors.

The results of the analyses presented in Table 21 illustrate *ANOVA* results and descriptive statistics for civilian education code and PEBD of U.S. Army soldiers in the rank of specialist serving in RA by TA usage.

Table 21

ANOVA Results and Descriptive Statistics for CivEd and PEBD of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by TA Usage

| Outcome | Group | | | | | | | |
|---------|-----------|-----------|-----------|----------|-----------|-----------|-----------|----------|
| | No TA Use | | | | TA Use | | | |
| Source | <i>SS</i> | <i>Df</i> | <i>MS</i> | <i>F</i> | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
| Group | 28,784.95 | 21 | 1,370.71 | 1,835.83 | 141.52 | 16 | 8.85 | 14.51 |
| Error | 67,877.44 | 90,910 | 0.75 | | 11,727.70 | 19,233 | 0.61 | |

Note. $p < 0.001$. Non-TA users group: $n = 90,932$. TA users group: $n = 19,250$.

As shown in Table 21, when the variables of CivEd and PEBD were compared between the two groups, $F(21, 90,910) = 1,835.83$, $p < 0.001$ for the soldiers who did not use TA, and $F(16, 19,233) = 14.51$, $p < 0.001$ for the soldiers who used TA. Also, a Scheffe post hoc comparison showed the 2004 PEBD category, as compared to the 2019 PEBD category, was statistically significant. Also, the 2005 PEBD category, compared to the 2019 PEBD category, was statistically significant. The 2006 PEBD category, as compared to the 2019 PEBD category, was statistically significant. The 2007 PEBD category compared to the 2018 and 2019 PEBD categories was statistically significant. The 2008 PEBD category compared to the 2018 and 2019 PEBD categories was statistically significant. The 2009 PEBD category, as compared to the 2012, 2013, and 2015 through 2019 PEBD categories, was statistically significant. The 2010 PEBD category compared to the 2013 through 2019 PEBD categories was statistically significant. The 2011 PEBD category compared to the 2013 through 2016 PEBD categories, and the 2018 and 2019 PEBD categories, was statistically significant.

The 2012 PEBD category, as compared to the 2018 PEBD and 2019 PEBD categories, was statistically significant. The 2013 PEBD category compared to the 2018 PEBD and 2019 PEBD categories was statistically significant. The 2014 PEBD category compared to the 2018 PEBD and 2019 PEBD categories was statistically significant. The 2015 PEBD category, as compared to the 2018 PEBD and 2019 PEBD categories, was statistically significant. The 2016 PEBD category compared to the 2017 PEBD through 2019 PEBD categories was statistically significant. The 2017 PEBD category, as compared to the 2018 PEBD and 2019 PEBD categories, was statistically significant. The 2018 PEBD category compared to the 2019 PEBD category was statistically significant. All other CivEd categories were not statistically significant.

A post hoc test of Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, $F(1, 19,248) = 168.35, p < 0.001$, indicated the null hypothesis must be rejected and the model was heteroskedastic. The likeliness of heteroscedasticity was expected since the CivEd levels were likely to vary to a greater degree concerning the year of observation. As data were reviewed further back, the likelihood of CivEd variance increased

The results of the analyses presented in Table 22 show *ANOVA* results and descriptive statistics for civilian education code and the age of U.S. Army soldiers in the rank of specialist serving in RA by TA usage.

Table 22

ANOVA Results and Descriptive Statistics for CivEd and the Age into the Army of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by TA Usage

| Outcome | Group | | | | | | | |
|---------|-----------|-----------|-----------|----------|-----------|-----------|-----------|----------|
| | No TA Use | | | | TA Use | | | |
| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
| Group | 31,198.58 | 31 | 1,006.41 | 1,397.45 | 1,634.46 | 22 | 74.29 | 139.57 |
| Error | 65,463.81 | 90,900 | 0.72 | | 10,234.76 | 19,227 | 0.53 | |

Note. $p < 0.001$. Non-TA users group: $n = 90,932$. TA users group: $n = 19,250$.

As shown in Table 22, when the variables of CivEd and age into the army were compared between the two groups, $F(31, 90,900) = 1,397.45$, $p < 0.001$ for the soldiers who did not use TA, and $F(22, 19,227) = 139.57$, $p < 0.001$ for the soldiers who used TA. Also, a Scheffe post hoc comparison showed the soldier's age category of 21 into the army compared to the age categories of the 18, 19, and 20 into the army was statistically significant. Also, the age category of 22 into the army compared to the age categories of the 17 through 21 into the army was statistically significant. The age category of 23 into the army, as compared to the categories of the 17 through 22 into the army categories, was statistically significant. The 24-year-old age into the army category compared to the 17 through 23 age into the army categories was statistically significant. The age category of 25 into the army category compared to the 17 through 23 age into the army categories was statistically significant. Also, the age category of 26 into the army, as compared to the 17 through 25 age into the army categories, was statistically significant. The 27-year-old age into the army category, compared to the 17 through 26 age into the army categories, was statistically significant. The 28-year-old age into the army category, as compared to the 17 through 26-year-old age into the army categories, was statistically significant. The 29-year-old soldiers' age into the army category compared to the 17

through 27-year-old soldiers' age into the army categories was statistically significant. The 30-year-old soldiers' age into the army category, compared to the 17 through 27-year-old soldiers' age into the army categories, was statistically significant. The 31-year-old soldiers' age into the army category compared to the 17 through 28-year-old soldiers' age into the army categories was statistically significant. The 32-year-old soldiers' age into the army category compared to the 17 through 28-year-old soldiers' age into the army categories was statistically significant. The 33-year-old soldiers' age into the army category compared to the 17 through 30-year-old soldiers' age into the army categories was statistically significant. The 34-year-old soldiers' age into the army category compared to the 17 through 30-year-old soldiers' age into the army categories was statistically significant. The 35-year-old soldiers' age into the army category compared to the 17 through 30-year-old soldiers' age into the army categories was statistically significant. The 36-year-old soldiers' age into the army category compared to the 17 through 28-year-old soldiers' age into the army categories was statistically significant. The 37-year-old soldiers' age into the army category compared to the 17 through 22-year-old soldiers' age into the army categories was statistically significant. All other age into the army categories were not statistically significant.

In a post hoc test of the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, $F(1, 19,248) = 2,947.46, p < 0.001$, results indicated the null hypothesis must be rejected and the model was heteroskedastic. The likeliness of heteroscedasticity was expected since the CivEd likely would vary to a greater degree concerning the year of observation. As previous data were reviewed, the likelihood of

CivEd variance increased. The results of the analyses presented in Table 23 demonstrate ANOVA results and descriptive statistics for civilian education code and number of years in service of U.S. Army soldiers in the rank of specialist serving in RA by TA usage.

Table 23

ANOVA Results and Descriptive Statistics for CivEd and Number of Years in Service of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by TA Usage

| Outcome | Group | | | | | | | |
|---------|-----------|-----------|-----------|----------|-----------|-----------|-----------|----------|
| | No TA Use | | | | TA Use | | | |
| Source | <i>SS</i> | <i>Df</i> | <i>MS</i> | <i>F</i> | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
| Group | 28,784.95 | 21 | 1,370.71 | 1,835.83 | 141.52 | 16 | 8.85 | 14.51 |
| Error | 67,877.44 | 90,910 | 0.75 | | 11,727.70 | 19,233 | 0.61 | |

Note. $p < 0.001$. Non-TA users group: $n = 90,932$. TA users group: $n = 19,250$.

As shown in Table 23, when the variables of CivEd and number of years in service were compared between the two groups, $F(21, 90,910) = 1,835.83, p < 0.001$ for the soldiers who did not use TA, and $F(16, 19,233) = 14.51, p < 0.001$ for the soldiers who used TA. Also, a Scheffe post hoc comparison showed the number of years in service category 1 was statistically significant when compared to the number of years in service category 2. The number of years in service category 2 was statistically significant when compared to the number of years in service categories 0 and 1. The number of years in service category 3 was statistically significant when compared to the number of years in service categories 0, 1, and 2. Also, the number of years in service category 4 was statistically significant when compared to the number of years in service categories 0 and 1. Also, the number of years in service category 5 was statistically significant when compared to the number of years in service categories 0 and 1.

Furthermore, the number of years in service category 6 was statistically significant when compared to the number of years in service categories 0 and 1. The

number of years in service category 7 was statistically significant when compared to the number of years in service categories 0 and 1. The number of years in service category 8 was statistically significant when compared to the number of years in categories 0, 1, 3, 4, 5, and 6. The number of years in service category 9 was statistically significant when compared to the number of years in service categories 0, 1, 2, 3, 4, 5, and 6. Also, the number of years in service category 10 was statistically significant when compared to the number of years in service categories 0, 1, 2, 3, 4, 5, 6, and 7. The number of years in service category 11 was statistically significant when compared to the number of years in service categories 0 and 1. Also, the number of years in service category 12 was statistically significant when compared to the number of years in service categories 0 and 1. The number of years in service category 13 was statistically significant when compared to the number of years in service categories 0 and 1. Also, the number of years in service category 14 was statistically significant when compared to the number of years in service category 0. The number of years in service category 15 was statistically significant when compared to the number of years in service category 0. All other numbers of years in service categories were not statistically significant.

In a post hoc test of Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, $F(1, 19,248) = 168.35, p < 0.001$, indicated the null hypothesis must be rejected and the model was heteroskedastic. The likelihood of heteroscedasticity was expected since the CivEd likely would vary to a greater degree in relation to the year of observation. As data further back were reviewed, the likelihood of CivEd variance increased. The results of the analyses presented in Table 24 reveal *ANOVA* results and descriptive statistics for

GT score and MOS of U.S. Army soldiers in the rank of specialist serving in RA by TA usage.

Table 24

ANOVA Results and Descriptive Statistics for GT score and MOS of U.S. Army Soldiers in the Rank of Specialist Serving in Regular Army by TA Usage

| Outcome | Group | | | | | | | |
|---------|------------|-----------|-----------|----------|--------------|-----------|-----------|----------|
| | No TA Use | | | | TA Use | | | |
| Source | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> | <i>SS</i> | <i>df</i> | <i>MS</i> | <i>F</i> |
| Group | 4,043,652 | 150 | 26,957.68 | 234.86 | 822,400.35 | 135 | 6,091.85 | 58.76 |
| Error | 10,406,081 | 90,659 | 114.78 | | 1,978,971.70 | 19,087 | 103.68 | |

Note. $p < 0.001$. Non-TA users group: $n = 90,932$. TA users group: $n = 19,250$.

As shown in Table 24, when the variables of GT score and MOS were compared between the two groups, $F(150, 90,659) = 234.86$, $p < 0.001$ for the soldiers who did not use TA, and $F(135, 19,087) = 58.76$, $p < 0.001$ for the soldiers who used TA. The Scheffe post hoc comparison was unable to be performed due to the number of combinations between the 85 unique GT score and the 150 Army MOSs.

In a post hoc test of Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, $F(1, 19,221) = 79.44$, $p < 0.001$, indicated the null hypothesis was rejected and the model was heteroskedastic. The likelihood of heteroscedasticity was expected since the GT score likely would vary to a greater degree in relation to the soldier's MOS. Different MOSs require different GT scores in order to be a part of that MOS job category. This could be further described as MOS dependent. Certainly, the more technical MOS/career fields may suggest an associate's degree (or higher) would greatly improve job performance. For example, this was most evident in MOS related to the health, aviation, and legal career fields.

Overall, findings showed that CivEd and PEBD for both TA and non-TA users were statistically significant. However, the model was heteroskedastic. Both groups for CivEd and age into the army were statistically significant. However, the model was heteroskedastic. In addition, both groups for CivEd and number of years in service were statistically significant. However, the model was heteroskedastic. Finally, both groups for GT score and MOS were statistically significant, but the model was heteroskedastic.

Chapter IV Summary

The purpose of this study was to determine the TA usage regulated by the demographic, military service-related, educational factors, or the combination of these factors in the population of junior-enlisted soldiers in the rank of specialist serving in the RA. The U.S. Army VolEd policy and the leader development aspects in soldiers' leader development were considered to determine the role they play in VolEd.

This study was limited to the pre-existing data metrics collected by the U.S. Army; the sample of this study represented an entire population of U.S. Army's junior-enlisted soldiers in the rank of specialist serving in the RA on the date of research. The quantitative outcomes suggested the U.S. Army might be achieving the goal of developing agile, adaptive leaders, and offer practical suggestions for review and approval of the current U.S. Army VolEd Program policy.

The ANOVA analysis was used to answer the following overarching research question: *To what extent are the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA using TA on active duty?* The hypothesis resulting from this question was as follows: There is a significant relationship among the groups of demographic, military service-related, educational factors, and junior-enlisted specialist's

TA usage while serving on active duty.

The researcher conducted the data analyses to answer the study's overarching question. Descriptive statistics and correlations between the TA usage and demographic, military service-related, and educational factors were calculated and resulted in both statistically significant and non-significant findings. TA usage was defined by two variables within the dataset: TA GPA and successful course enrollments.

The successful course enrollment was defined as the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA who successfully completed an academic class between FY 2016 to FY 2019 and who received a final class grade of either passing or failing. The TA GPA was defined by the Army's definition outlined in AR 621-5 that follows the standardized definition of grade point average, which is the numerical value assigned by EIs and follows the standardized practice of assigning numerical values to their corresponding letter grades. An additional dependent variable associated with TA usage was degree earned using TA. However, because of reporting limitations, the variable was the least contributing dependent variable to the research. Based on the limitations associated with reliable reporting concerning the dependent variable, it was not sufficiently reliable to consider within the scope of this study.

The pragmatic RQs assisted in answering the central question of this study. Fourteen independent variables from the dataset were studied and compared to each other. Analysis of the results showed the null hypothesis was rejected for all three RQs. There were no significant relationships between TA usage and the demographic, educational, and military service-related factors identified. However, further analyses of factors showed significant relationships between the variables when all three categories

were examined. RQ1 utilized age, gender, marital status, ethnicity, and race to determine whether demographic variables impact TA GPA and successful course enrollments.

Although the researcher failed to reject the null hypothesis when combining all demographic variables as a group, the null hypothesis was rejected when examining the individual effects of age, gender, marital status, ethnicity, and race on TA GPA and successful course enrollments.

RQ2 utilized MOS, CMF, PEBD, age into the army, and number of years in service to determine whether military service-related variables impact TA GPA and successful course enrollments. The researcher failed to reject the null hypothesis when combining all military service-related variables as a group. However, the null hypothesis was rejected when examining the individual effects of MOS, CMF, PEBD, age into the army, and number of years in service on TA GPA and successful course enrollments.

RQ3 utilized cumulative total of classes taken with TA, BSEP, CivEd, and GT score to determine whether educational variables impact TA GPA and successful course enrollments. The researcher failed to reject the null hypothesis when combining all educational variables as a group. However, the null hypothesis was rejected when examining the individual effects of cumulative total of classes taken with TA, BSEP, CivEd, and GT score on TA GPA and successful course enrollments.

Additional research questions were posed because each null hypothesis failed to be rejected, even though the independent variables within each RQ were statistically significant. Therefore, an additional exploration between TA users and non-TA users, as various RQ independent variable pairings, was considered. When looking at CivEd as the dependent variable, PEBD, age into the army, and number of years in service were

statistically significant as independent variables for non-TA users. However, results were statistically significant for only the non-TA users group. Furthermore, GT score as the dependent variable and MOS as the independent variable were statistically significant as well. Also, post hoc tests were run for the CivEd level when compared to the three independent variables, as well as GT score and MOS, and showed that both dependent variables were heteroskedastic, which should be addressed in future studies to ensure standard errors are reliable.

Overall, these findings are essential to VolEd to recognize the pattern and trends in CivEd as they relate to the population of junior-enlisted soldiers in the rank of specialist serving in the RA. The findings demonstrated that the U.S. Army junior-enlisted soldiers in the RA fall into expected factors and behaviors outlined by NCES. The average age for adult learners in the US is 25 (Hussar & Bailey, 2016), and 70% of junior-enlisted soldiers in the rank of specialist in the U.S. Army are from 18 to 25 years. Further, in-depth analysis of the target population showed that although the null hypotheses of the three research questions were rejected, the individual independent variables showed statistical significance, which warrants further analysis.

CHAPTER V: DISCUSSION

Introduction

Leadership is about influencing people and helping them to grow as a professional and as an individual (DA, 2019b, 2019h). This study was an attempt to understand, implement, and emphasize the importance of self-development and to establish the lineage of successfully developing the leaders in the organization through civilian education. “Civilian education and training mutually support and enhance the Army’s readiness and are key pillars of Army leader development” (DA, 2019c, p. 6). Understanding factors that discourage adult participation in formal education are as relevant to defining the problem as identifying enabling conditions that promote participation (Cross, 1981; McCann et al., 2012; Saar et al., 2014).

The Study in Brief

The overarching purpose of this quantitative study was to assess the U.S. Army’s effectiveness at developing adaptive and self-aware leaders through CivEd by reviewing the TA usage dynamics and patterns in the junior-enlisted population. The central research question of this study was: To what extent is the U.S. Army junior-enlisted soldiers in the rank of specialist serving in the RA using TA while on active duty? The researcher selected a sample of soldiers currently in the Army serving in the rank of specialist in RA, which represents the largest enlisted population of junior-enlisted soldiers, as a fundamental approach directly related to this study’s overarching purpose. Understanding the TA usage dynamics of junior-enlisted soldiers in the RA could help organizations such as the U.S. Army determine which aspects of current TA policy promote TA usage and ultimately contribute to the organization’s leader development

philosophy. Also, the researcher attempted to review the data regarding the individuals themselves as adult learners to gain a better understanding of their demographic profile, military service-related, and educational barriers in an attempt to help the U.S. Army to recognize the challenges that soldiers may face and assist in the removal of barriers to ensure soldiers reach their educational goals.

The dependent variable of interest for this study was the TA usage of the U.S. Army junior-enlisted soldiers in the rank of specialist serving in RA. The dependent variable was comprised of three sub-variables that influence TA-usage: successful and unsuccessful course enrollments, TA GPA, and degree earned using TA. The U.S. Army's pre-existing ITAPDB data were used for this study. The researcher grouped the independent variables into three groupings: demographics, military service-related, and educational.

The results of this study suggest that although the null hypotheses were not rejected, the statistical significance for individual independent variables suggests the presence of a more complex and dynamic model of interaction. Given the lack of academic research that focuses explicitly on the Army's TA Program, this study represents a foundation for further exploration of the topic.

Discussion

Based upon the application of Cross's model in the context of a military-specific population, factors affecting soldiers in meeting their education goals were organized into five groups: military, social, personal, integration support, and resources. Application of Cross's model to soldiers' participation in the VolEd Program created an opportunity of classification and provided clarity in simplification of the adult learning leading to a

potential increase of soldiers' participation in adult learning in the Army (Appendix L). As outlined in Appendix K, there were limitations within the dataset when applying Cross's model to soldiers' participation in adult learning. However, the results suggest Cross's model is still applicable when looking at cross-factorial correlations. The application of Cross's model did not discuss variability between factors when studying individuals. However, it is believed the model should be interpreted to understand that the situational, dispositional, and institutional factors influence individuals in different ways and to varying degrees when considering the individual as a whole.

Examining and researching factors can explain why many junior-enlisted soldiers do not complete their degrees while serving in the military despite the substantial educational benefits provided to them through GoArmyEd and the support available to them from the Army education centers and EIs worldwide. Skilbeck (2006) reported:

apart from understanding trends in adult lifelong learning participation, usually obtained through the analysis of participation statistics, another major interest for the field of understanding what prevents adults from participating, in order that actions be taken to help adults overcome these barriers, or even to remove them. (as cited in Boeren, 2016, p. 55)

Life Factors Affecting Soldiers in Reaching Their Educational Goals

Hall (2008) asserted that "the military culture has been described as a fortress or a warrior society (Wertsch, 1991), which not only sets this as a world apart, but also influences mental and psychological self-perception" (as cited in Anderson & Goodman, 2014, p. 41). Many factors influence the environment in which soldiers operate.

Changes in the environment cause continuous adjustments and changes in a soldier's approach to many aspects of life, including VolEd. The researcher followed a systematic approach by building from the individual perspective toward an overarching approach (Boeren, 2016). A function of the literature review section was to evaluate some barriers encountered by the U.S. junior-enlisted soldiers serving in RA and to identify connections with adult participation in the current adult learning models.

The U.S. Army depends on the domains of training, education, and experience to cultivate leaders throughout the organization. Diverse factors play a fundamental role in soldiers' decisions to pursue educational opportunities while serving on active duty. The researcher cataloged them into military, social, resources, integration support, and personal groups. As identified by the researcher, factors may either distract or entice soldiers to pursue their educational goals, as presented in Appendix K. It is vital to note the factors identified in this study are not a complete list of the reasons the soldiers could not pursue an educational goal and, thus, requires further research. The summary of the factors affecting soldiers in meeting their educational goals is presented in Figure 19. The examples are provided in order to explain the context of the factors as perceived by military adult learners.

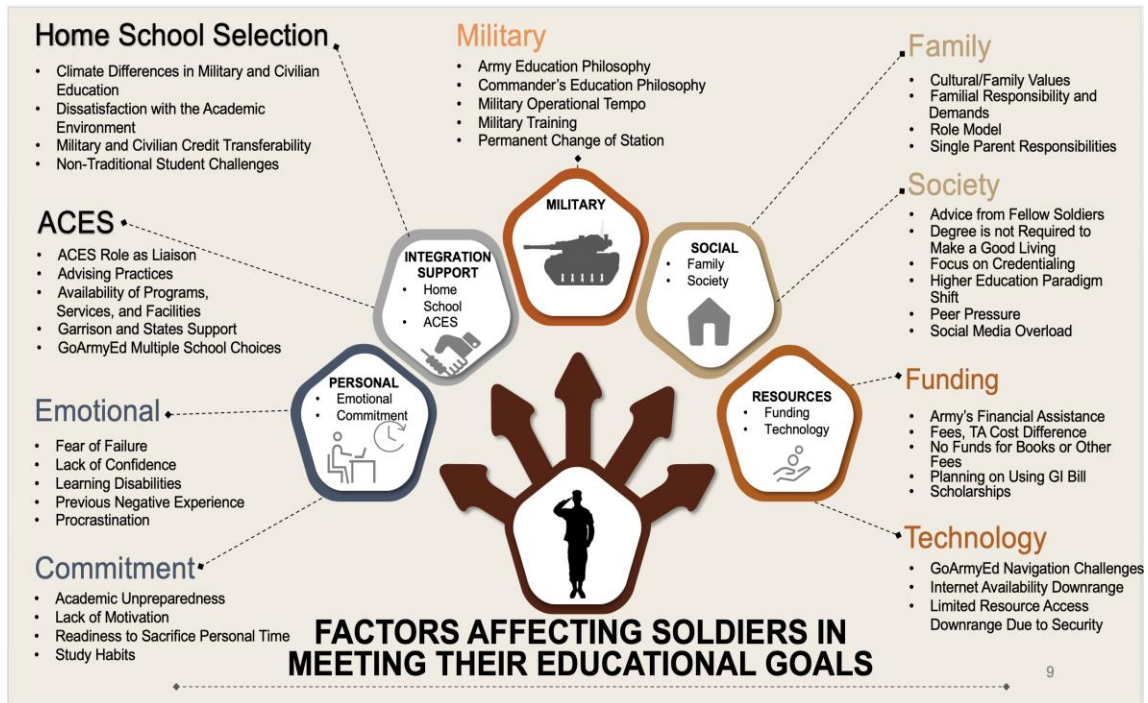


Figure 19. Factors affecting soldiers in meeting their educational goals.

Military Factors

“The RA signed over 68,000 new active-duty soldiers, exceeding its FY 2019 recruiting mission” (DA, 2019j). The U.S. Army is raising its leaders (DA, 2017a). Training and education are an integral part of the U.S. Army’s organizational culture. From the first day of initial entry training and throughout the Army career, the Army provides soldiers with opportunities to gain the skills and knowledge to perform their job, as well as to build a foundation to grow in leadership roles and future developmental assignments. “The development of a culture of lifelong learning coupled with professional and personal goal setting is mutually beneficial to the Army and its soldiers” (DA, 2018b p. 17). “Army leaders require a solid educational foundation and continual learning opportunities to enable them to manage and lead in an era of change” (DA, 2019c, p. 7). The first group of factors that can play a vital role in VolEd participation comprises military factors. They include: (1) the U.S. Army’s educational philosophy,

(2) the commander's educational philosophy, (3) military operational tempo, to include deployments, (4) military training, and (5) PCS.

The first factor in this group represents the U.S. Army's educational philosophy. The U.S. Army promotes lifelong learning opportunities, readiness, and resilience by providing quality educational programs and services (DA, 2018b). VolEd contributes to the "academic, technical, intellectual, personal, and professional development of service members, contributing to the readiness of the military and the quality of Service members and their families lives" (DD, 2014, p. 18).

The policy proponent for the U.S. Army's VolEd is ArmyU, ACCESS. The U.S. Army's VolEd Program is directly aligned to the Army's objective to retain quality soldiers, enhance career progression, increase combat readiness, and soldiers' return with relevant education and skillsets to a civilian career (DA, 2019c). The U.S. Army's leader development is supported through VolEd and imperatives outlined through: (1) commitment to the Army profession, lifelong learning, and development; (2) balancing Army's commitment to the training, education and experience components of leader development; and (3) managing military and civilian talent to benefit the institution and individual (DA, 2013b). The Army defines self-development as planned, goal-oriented learning that reinforces and expands the depth and breadth of an individual's knowledge base, self-awareness, and situational awareness (DA, 2017a).

The second factor in this group is the unit commander's educational philosophy. Local command's leadership can heavily influence the soldier's desire and decision for further education through either support or lack of support. Moreover, Barry (2015) stated:

perceived support received in a war zone from one's military unit also positively influences academic adjustment among soldiers. It is not surprising that the influence of perceived social support from one's military unit was five times more influential than perceived social support from family, friends, and significant others. (p. 415)

Examples of a unit commander's positive educational philosophy can be presented in collaboration efforts with the servicing education centers and officers: the units' educational briefings on the various topics, allocating time aside for educational activities, checking on soldiers' educational progress, and reinforcement of the importance of VolEd.

The third factor is the military operational tempo. Soldiers do not have the time to pursue any education opportunities due to time restraints and fulfilling their military duties. Soldiers do not perform regular 40-hour-per-week jobs and can be called to duty at any time. Therefore, the military operational tempo presents a roadblock in the degree completion designated timeframe or often interrupts the soldier's pursuit of VolEd. Another reason for not meeting the educational goals, which falls under the military operational tempo, is frequent deployments. In this situation, soldiers could be deployed to a war zone, and furthering their educational goals is not high on their priority list and takes a back seat until the circumstances allow.

The fourth factor is military training. "The Army trains to fight and win" (DA, 2019f, p. 1-1). "Training readiness provides the backbone to the development of unit readiness—the Army's priority" (DA, 2019f, p. 1-1). This factor provides a foundation for disciplined and rational decision-making skills, which could support future academic

learning the soldiers pursue (DA, 2017a; 2019f). Military training could be evaluated by the soldiers' EIs for potential academic credit through the accredited agency. Military training also can serve as preparation for college and provides study tips. Kyndt and Baert (2013) reviewed the antecedents of participation in work-related education and training and distinguished a category of job characteristics, arguing that "a range of factors at the job level is related to the opportunity to participate and correlate with participation in lifelong learning" (as cited in Boeren, 2016, p. 94). Furthermore, "the stronger the overall job profile, the more likely the employee will receive training" (Boeren, 2016, p. 94).

The fifth and final factor in the military category is PCS, which affects soldiers' decisions to engage in the VolEd Program. On average, soldiers remain in the same duty station between two to three years, which prevents them from completing a degree in one location, especially if the soldier's preferred delivery format of adult learning is face-to-face. This represents a negative aspect in the degree completion. However, moving to a different duty station might be a positive change for soldiers, especially if the installation offers more choices of classes in the face-to-face format.

While deployment-related experiences were linked to many psychological issues, being deployed also presented the practical challenge of being away from school. Focusing primarily upon college re-enrollment after military absences (e.g., deployment, training), Livingston, Havice, Cawthon, and Fleming (2011) reported participants being separated from their educational pursuits on average of 13 months. (Barry, Whiteman, & Wadsworth, 2014, p. 37)

Social Factors

The second group involves social factors, which can be divided into two subcategories: family and society factors.

Family. Family factors encompass family responsibilities, demands, and the decision to sacrifice personal time to further education. One of the major reasons adults do not participate in adult learning activities is the lack of time (Boeren, 2011; Boeren, 2016; Cross, 1981). The family factors include: (1) cultural and family values, (2) familial responsibility and demands, (3) role model, and (4) the single parent responsibility and commitment.

The first aspect in the social factors of the family subcategory is *the cultural and family values*. Barry (2015) stated that “perceived social support from family, friends, and significant others as positively influencing academic adjustment” (p. 415). Soldiers are coming from different backgrounds and different upbringings. Family values are different; hence, an outlook on life and view on the situations are different. The family’s view on postsecondary education is not different in this aspect. It is not uncommon that the soldiers are usually first-generation graduates.

However, it is not surprising to see the generations followed the same patterns in profession choices, as the values are essential in providing a blueprint for an individual’s life. Boeren (2016) indicated that knowing family members who started a learning journey and who demonstrated high levels of satisfaction is an excellent way to have a positive influence on an adult’s decision-making process.

The second factor in this subcategory, which can affect the VolEd participation and ultimately the degree completion, is the familial responsibilities and demands.

Enrolling in postsecondary education programs is a big step not just for the soldier, but also for the entire family, spouse, children, or significant others who must adjust to a new routine (Phillips, 2000). The responsibility and commitment of single parents may prevent soldiers from fully engaging in education activities because of family obligations and the limitation of time.

The third factor is that soldiers enroll in college to impress specific influencing individuals in their lives. Soldiers also may be motivated to pursue a college degree to be a role model for their children, to show them the value of education to help them become more successful in life.

Society. The second subcategory in the group of social factors is society. Barry (2015) argued that “soldiers need to perceive and receive social support, especially from other military-affiliated peers” (p. 415). This element represents social factors that influence a soldier’s decision making in the educational pursuit. The elements in this group include: (1) advice from a fellow soldier, (2) the belief that the degree is not required to make a good living, (3) the focus on credentialing, (4) postsecondary education paradigm shift, (5) peer pressure, and (6) the social media overload.

According to the Business Dictionary (n.d.), the *word-of-mouth communication*, or a suggestion, is considered the most effective form of promotion. Soldiers are enamored in military communities, and a piece of advice from the fellow soldier is highly valued. “Successful learners can act themselves as effective and valuable sources of information for new and potential learners through word-of-mouth” (Boeren, 2016, p. 105). If soldiers experience a positive interaction with the education counselors and home EIs and feel the services are well-intentioned, it is more likely they will share their

experience with their fellow soldiers. Furthermore, the negative experience might be a deal-breaker for selecting a school or program, or pursuing the educational opportunities overall.

The second subcategory factor in the social group under society is the soldier's realization that the degree is not necessarily a requirement to make a good living in the modern world. Therefore, the soldier's decision to pursue a degree in EI is not a priority.

Available CA opportunities is another factor that contributes to the soldier's decision to pursue postsecondary education opportunities. The Army's CA program is the newest U.S. Army's educational initiative. According to Raymer, "the CA program adds value to the Army while soldiers serve and also prepares them for civilian life" (as cited in Sweeney, 2019).

Taylor (2010) reported that:

while many professional schools and vocational programs are doing a good job preparing students for viable professions and careers, most graduate programs in the arts, humanities, and many of the social sciences are far less successful.

Numerous skills cultivated in graduate programs and passed on undergraduates are diminishing value. (p. 21)

A postsecondary education paradigm shift has occurred in modern society, in which postsecondary education has been losing ground with the public and even with many of those closely associated with it (Brausch, Cangemi, & Moody, 2018, p. 81). It is crucial to note there has always been a focus on credentialing in the nation. According to Taylor (2010), in 1850 the Massachusetts General court called on Harvard to reform its curriculum to prepare "better farmers, mechanics, or merchants" (p. 65). "American

postsecondary education has consistently wrestled with the problem of balancing the practical and the impractical, the common and the elite, the applied and the theoretical” (Taylor, 2010, p. 67).

The factor affecting soldiers in meeting their educational goals in the social category under society is peer pressure. Barry (2015) argued that “soldiers feel that they are ‘different’ from their civilian counterparts and are more likely to feel supported by their fellow Soldier” (p. 415).

The remaining factor in this category is social media overload. Aggressive postsecondary education marketing campaigns and the social media information overload add confusion for the non-experienced adult learner and may influence unrealistic outcomes and expectations based on false advertising or deceptive marketing.

Personal Factors

The third group of factors that contribute to a soldier’s decision to participate in VolEd Programs to meet the educational goals is the personal factors group. This group focuses on the individual and may be simplified into two subcategories: emotional and commitment.

Emotional. The emotional group is centered on the soldier’s mental state and their personal feelings regarding educational pursuit. Barry et al. (2014) noted “compared to civilian peers, soldiers exhibit disproportionately higher rates of health risk behaviors and psychological symptoms, and personal and educational adjustment difficulties; i.e., the inability to connect with peers and faculty on campus” (p. 30). Furthermore, Barry et al. stated “soldiers articulate an inability to connect with their civilian student peers or resume relationships upon return from deployment” (p. 37).

Educational trauma is not as well researched; however, Gray (2016) defined the term in 2011 as “the inadvertent perpetration and perpetuation of victimization of producers and consumers of the educational system” (as cited in Soares & Choitz, 2019, p. 20). Barry (2015) asserted that “soldiers are experiencing significant psychiatric symptoms, which in turn, could impact their health, functioning, and academic achievement” (p. 410). The emotional subgroup includes the following factors: (1) fear of failure, (2) lack of confidence, (3) learning disabilities, (4) previous negative learning experience, and, finally, (5) procrastination.

The first factor in this subcategory is a fear of failure, which enables the soldiers to avoid any situation in which they perceive they may not succeed. The daunting task of achieving their academic goals might turn them away from completing their degrees.

According to Deggs (2011):

if the barrier cannot be eradicated, then the organizations must continue their efforts to assist learners in navigating these barriers through the development and implementation of appropriate support systems. Support systems must acknowledge and address adult learners’ need for balance and fear of failure (p. 1550)

The fear of failure, which is connected to low self-esteem, leads to a general all-encompassing belief that the soldiers could not complete their educational goals, despite not trying. “Colleges are perceived as the institutions that put the stamp of approval on intelligence these days” (Phillips, 2000, p. 4).

The third factor involves an individual’s learning disabilities, diagnosed or undiagnosed. The U.S. Army does not need to comply with the Americans with

Disabilities Act (ADA), which is designed to limit barriers toward learning. The EIs are required to comply with the ADA. But inconsistencies or differences in policies may create or reinforce barriers to learning for soldiers. The fourth factor is the lack of interest in pursuing a degree because of previous negative experiences. Thomas (2001) pointed out that the barriers put forth by the initial school system, such as those that reflect negative learning experiences earlier in a soldier's life, could prompt a soldier to put off returning to educational settings because of the stigmatization by the label of "bad learner" (as cited in Boeren, 2016, p. 99).

The fifth factor is procrastination. Some soldiers wait until the end of their career to explore the educational opportunities. Phillips (2000) suggested many people procrastinate from pursuing the degree because "they are not sure what kind of degree they want to earn" (p. 6).

Commitment. The second subcategory of personal factors is the commitment, in which a soldier's overall willingness to push through to the end and see the completion of the academic goal is tested. McMillan (2017) argued that "one of the greatest purported strengths of the U.S. postsecondary education system is the stability to move in and out of it over time and throughout changing life circumstances" (p. 141). These subcategories include the following: (1) academic unpreparedness, (2) study habits, (3) lack of motivation, and (4) lack of interest in devoting the time to pursue the educational opportunities while serving on active duty.

The second factor is study habits. Many soldiers joining the Army are first-generation, college-bound students. The level of academic experience and study habits may not be well developed, which could create a barrier to meeting their educational

goals. Some soldiers who attended public schools are not taught note-taking skills or test-taking strategies. Teachers are underpaid and overworked. The average guidance counselor-student ratio is 400-to-1, and guidance counselors spend the majority of their time with course scheduling and testing, as well as crisis counseling.

The third factor in the personal factors category is the lack of motivation. Rathus (2012) explained that motivation is “derived from the Latin word *movere*, to ‘move,’ which reflects the effort one will make to move in the desired direction” (as cited in Boeren, 2016, p. 65). Boeren (2016) added that based on the known research, “there is a clear overall pattern showing that older adults participate less in adult learning activities, and this decline starts in mid-life, around the age of 45” (p. 76). “Motives differ for different groups of learners at different stages of life, and most individuals have not one, but multiple reasons for learning” (Cross, 1981, p. 97). “Motivation is inspired by both internal and external sources, such as the likelihood of reward, recognition, and promotion” (Zacharakis & Polson, 2012, p. 24). The fourth factor is the willingness to sacrifice personal time. Boeren (2011) articulated that “one of the dominant barriers preventing adult lifelong learning is the lack of time” (as cited in Boeren, 2016, p. 57).

Integration Support Factors

The fourth group of factors affecting a soldier’s decision to meet their educational goals may be summarized as the integration support and can be divided into two subcategories: ACES and soldier’s EI homeschool selection.

ACES. ACES involves playing a vital role in providing guidance, implementing policy, and overseeing the educational opportunities within the DA (DA, 2019c). The ACES is the gateway for soldiers to obtain a degree during their military career, and its

vision is “that every soldier participates in the VolEd Program, and every eligible soldier uses TA for degree completion” (DA, 2019c, p. 5). The researcher suggests consideration of the following factors: (1) ACES’ role as a liaison; (2) advising practices; (3) availability of programs, services, and facilities; (4) support from soldier’s Garrison and states’ authorities, such as Garrison Commander; and (5) GoArmyEd expanded EIs availability selection.

The ACES, in the role of a liaison, establishes a working relationship with unit commanders to ensure soldiers’ participation in ACES programs and services (DA, 2019c). The ACES staff plays a vital role in the process by delivering the information and guiding the adult participation process. Boeren (2016) indicated that “it is important that potential adult learners receive information about specific courses, as an unawareness of educational offers make it very difficult for the adult learner to reach a positive match between his or her demand and the existing supply” (p. 105).

ACES provides opportunities for Army leaders to develop or sharpen skills in visionary and critical thinking, innovation, adaptability, creativity, and decision making; provide opportunities for soldiers to gain the skills required to leverage information systems, and maintain a working knowledge of the most current training doctrine and regulations governing soldiers leader and self-development programs: AR 350-1, AR 600–100, DA PAM 600–3, DA PAM 600–25, and FM 7–0. (DA, 2019c, p. 7)

The partnership between ACES and the EIs provides a substantial determinant of participation in adult learning activities. Grotluschen (2010) revealed “around 20% of adults do not participate in adult lifelong learning activities based on an information

deficit” (as cited in Boeren, 2016, p. 105). Moore et al. (2013) argued “information, advice, and guidance are essential aspects of widening participation processes” (as cited in Boeren, 2016, p. 106). Education counselors are guiding, communicating, and providing professional help to soldiers worldwide. “Applying knowledge of military practices with a permanent lens academic goal accomplishment strategy allows advisors to help soldiers build a better relationship that may extend beyond the college to the military” (Wilson et al., 2012, p. 73).

The availability of education personnel helps soldiers to pursue the educational goals despite different work shifts, temporary duty (TDY), and deployments. Finally, the education personnel hold the soldier accountable when he or she loses motivation or direction. Well-trained education personnel provide soldiers with a better chance for success, especially in the transition to the civilian sector.

Learning activities need to be accessible so the adult learner is able to manage the workload and complete the course or training successfully (Boeren, 2016). Deggs (2011) commented that “the student recruitment and retention models that are being vetted today for use with adult learners must be flexible enough to accommodate the needs of the myriad of adult learners who are entering higher education” (p. 1550). It is vital for the EIs working with the military students to understand military culture and to pay attention to individual differences in soldiers as students through policy and guidance. The EIs’ learner-centric approach, described as “learning focused on the individual fosters learning competencies with learning strategies, expert facilitators, and technologies that support the learner” (DA, 2017c, p. 47), is critical to achieving academic success. The DoD VolEd has successfully convinced many EIs to sign a letter of instruction (LOI) to

participate in automated GoArmyEd processes. Boeren (2016) noted that the “availability of offers—learning activities—is essential, and participation cannot take place without them” (p. 97).

The Army ensures soldiers are supported when engaging in VolEd through ACES education centers. However, the importance and criticality of VolEd, as demonstrated by support from the higher level commanders such as the Garrison Command, sets the precedent for all participation in VolEd. Greater support from the Garrison Commanders typically results in higher participation with VolEd. Garrison support includes ensuring information about VolEd opportunities is incorporated into a wide variety of venues and Garrison media platforms (e.g., new soldier orientation sessions, family support activities, public affairs media and activities). This varies among posts. Barriers to this include a general lack of awareness of the VolEd Program among Garrison leaders (can be attributed to the ESO failure) and competing for time to brief soldiers and unit leaders, given the amount of information already covered in these sessions. The lack of awareness also could be attributed to a lack of or limited advertising budget of Ed Centers to buy advertising in community media.

Although there are 2,500+ EIs currently participating with the Army’s TA program, approximately 80% of all soldiers utilizing TA attend only 20% of the participating EIs (GoArmyEd, 2019). The greater degree of selection ensures participation. However, the sheer number of choices may be intimidating for inexperienced learners.

Soldier’s EI homeschool selection. The second subcategory in the integration support group is soldier’s EI homeschool selection. “Modern universities are immensely

complex institutions” (Bok, 1986, p. 2), and a soldier’s experience is based entirely on the institution from which the soldier obtained a degree. Because of the complexity and the multitude of programs and services, Kerr (n.d.) asserted “the universities should be referred to as multiversities because they are responsible for such a dizzying variety of programs and activities” (as cited in Bok, 1986, p. 2).

The disciplinary structure and division of responsibility established by Kant, the 18th-century philosopher, have proven remarkably stable over the years. However, “the expansion of knowledge and increasing complexity of problems created by the proliferation of information and the emergence of new areas of inquiry can no longer be confined within traditional disciplinary boundaries” (Taylor, 2010, pp. 18-19). Taking into consideration the soldiers are non-traditional students with various roles and responsibilities outside the academic environment, they are “maybe almost incapable of routinely using high-level skills without supportive environments like those provided by EIs such as colleges” (Bok, 1986, p. 4). O’Donnell and Tobbell (2007) reported “adult learners are vulnerable in higher education due in part to the difficulty of transitioning to college. The vulnerability is heightened due to their lack of educational experiences and responsibilities away from the institution” (as cited in Deggs, 2011, p. 1541). This category includes the following factors: (1) climate differences in military and EI’s environments, (2) dissatisfaction with the EI’s academic environment, (3) military and civilian credits transferability policy, and (4) non-traditional students’ challenges.

The first factor in a soldier’s selection of EI is climate differences between military and CivEd. Barry et al. (2014) noted that with “the upswing of student service members/veterans to U.S. EIs, there has not been a corresponding increase in our

understanding of the unique issues pertinent to this subgroup” (p. 30). Also, Barry et al. cited Livingston et al. (2011), who stated the soldier’s “departure from the military’s structure and protocol to the loose structure of college was particularly challenging” (p. 37).

Ventrone and Karczewski (2015) indicated soldiers’ needs vary significantly from the civilian population. Furthermore, they believed the selection of an EI that can cater to soldiers’ specific needs is imperative for creating a positive learning environment.

Soldiers need considerable flexibility in their learning environment. “Often they require a school that offers a wealth of online courses and degree offerings, shorter or self-paced semesters, military familiarity, understanding professors, and an academic counselor who will always be available” (Ventrone & Karczewski, 2015, p. 10). Accelerated degree programs have become more popular among EIs to meet the needs of adult learners and have been described as a “new mental model of learning, grounded in adult maturity and responsible engagement in the world beyond the classroom” (Deggs, 2011, p. 1541). Of all the soldier’s life events, around-the-clock military service takes priority and requires a soldier’s availability. “Between deployments and PCS moves, soldiers need to know that the school they have chosen will assist them at every turn no matter what type of situation arises” (Ventrone & Karczewski, 2015, p. 11).

The second factor in the soldier’s EI category is dissatisfaction with the academic environment. Linderman (1926) argued that “in an adult class the student experience counts for as much as the teacher’s knowledge. Both are exchangeable a par” (as cited in Knowles et al., 1998, p. 39). Linderman added, “...Under democratic conditions

authority is of the group. This, not an easy lesson to learn, but until it is learned, democracy cannot succeed” (as cited in Knowles et al., 1998, p. 39).

The third category is the military and civilian credit transferability. Military duty often requires relocations within the U.S. and overseas. Relocations may lead to the decision to transfer to a different EI. This triggers concerns regarding transferability of previously earned academic credits. The decision to accept previous military and civilian credits depends on the EI’s policy based on whether the credits fit into the degree plan. “Schools usually consider the accreditation of the prior institution and specific program requirements when reviewing credit brought in from other institutions” (Ventrone & Karczewski, 2015, p. 12.). McMillan (2017) stated “education researchers have studied articulation agreements for years, particularly in studies of the community college sector, because their mission to create access makes those agreements salient” (p. 149). Anderson et al. (2006) noted “articulation agreements negotiate the requirements for students’ movement from institution to institution and support the transfer intent” (as cited in McMillan, 2017, p. 149). Another aspect related to credit transferability is the EI’s “academic residency” requirements. Many EIs require that transfer students have a minimum number of credits remaining to degree completion to be awarded a degree from that school.

The fourth category involves the non-traditional students’ challenges. Kasworm (2005, 2010), Norris (2011), and Kasworm (2005, 2010) argued that “adult education researchers have long suggested a critical difference between the non-traditional adult learner and traditional learner—that the non-traditional adult learners may have a more focused idea of what goals they hope to accomplish through educational attainment” (as

cited in Zacharakis & Polson, 2012, p. 66). Deggs (2011) commented that “the non-traditional characteristics of today’s adult learner in higher education include delayed enrollment, part-time attendance, financial independence, full-time employment, having dependents other than a spouse, being a single parent, and not obtaining a standard high school diploma” (p. 1543).

Resources Factors

The fifth category is the resources factor, which represents two subcategories: funding and technology.

Funding. Pursuing the civilian education beyond the Army professional training is vital to many soldiers. Soldiers are authorized a maximum of 16 semester hours of TA at the rate of up to \$250 per semester hour each FY (DA, 2019c; DD, 2014). However, this level of funding is not always sufficient to cover educational expenses. Therefore, many soldiers use additional education funding, to include their GI Bill benefits, to pay for college during the military career. “Cost can be one variable or separated into tuition costs, books, and transportation, lost time from work, and so on” (Cross, 1981, p. 98). The funding category covers the following aspects of soldiers’ education expenses: (1) TA; (2) additional funding for covering fees, books, and the TA cost difference; (3) VA GI Bill benefits; and (4) scholarships, grants, and other funding.

Additionally, the Army’s current 16 semester hour-per-FY and \$250 per credit limit does not allow soldiers to utilize more than 16 credits in any FY, even if the EI’s cost per credit is less than \$250 per credit (DA, 2019c; DD, 2014). Books and fees are not covered by TA funding (DA, 2019c) and require additional resources. Additional

EIs' TA costs may discourage TA participation and create delays in reaching soldiers' educational goals.

Technology. “Despite intriguing possibilities, we must remember that technology has raised great hopes on several occasions in the past to disappoint its backers” (Bok, 1986, p. 150). “Thomas Edison once predicted that the phonograph would revolutionize teaching, and several prominent foundations and corporations spent vast sums to bring the radio and later television into widespread classroom use” (Bok, 1986, p. 150).

The DoD's long history of technological innovation has delivered unmatched competitive advantages over potential adversaries. Military advantages, however, are eroding in the face of emerging threats, which necessitates continued and focused investment in national defense. Today's science and technology investments are the foundation for future breakthroughs, creating affordable, decisive advantages, while prototyping and experimentation activities will help drive down risk. (Office of the Under Secretary of Defense, 2018)

New technology is an imperative aspect in the modern world, and it can be positive; yet, technology can be the most harmful factor playing an essential role in the decision to pursue educational opportunities. Some negative aspects of modern technology include: (1) cost—technology can be expensive, (2) outdated—in the contemporary and the evolving world, changes are rapid, which make things outdated and obsolete quick, (3) complicated and sophisticated—difficulty to use it and requires additional training or knowledge, (4) distracting—which raises the question of whether technology enhances or distracts from learning, and (5) accessibility—interferences or

interruptions to the soldier's education due to lack of internet access or physical attendance while deployed. Technology factors include: (1) GoArmyEd navigation, (2) internet availability downrange, (3) limited resource access downrange due to security reasons, and (4) advanced technology.

Due to soldiers' mobility and the nature of the military culture and lifestyle which requires frequent physical moves, an adequate system is necessary to manage soldiers' VolEd educational records and the EI's degree and course offerings, as well as to provide the communication channels between soldiers, EIs, and education counselors. The GoArmyEd System provides an opportunity to request TA anytime and anywhere. However, it may present challenges, as any operating system requires constant tune-ups and updates.

In addition to the functionalities described previously:

GoArmyEd offers a decision-support tool that helps soldiers research and chooses a long-term civilian career goal, a degree that prepares them to attain the goal, and an EI that offers the best program and the best value to pursue the degree.

Soldiers do not have to be eligible for TA to use the decision-support tool but must establish a GoArmyEd account to access it. (DA, 2019c, p. 12)

According to Boeren (2016):

the easiest way is to maintain a website to share the information, but this information will only be found by those who are actively searching for information and will not help adults to translate their perceived need into a learning need as they might not know of the offer. (p. 105)

Internet availability and the limited resource access downrange due to security may affect a soldier's desire or ability to further their education while serving in deployed locations. "The technological advances occur in quantum leaps that result not in just more or better but in radically different ways of doing things" (Cross, 1981, p. 28). Recent initiatives include the GoArmyEd modernization, which consists of a technologically modernized, mobile-capable platform to facilitate access to Army-provided financial aid to eligible users. The system maximizes consumers' and providers' participation through a focus on the user experience and application flexibility that allows it to keep pace with emerging requirements and user preferences. The U.S. Army recognizes the fast pace in the modern environment and places importance on technological innovation. Drucker (2004) indicated that "in a period of upheavals, such as the one we are living in, change is the norm" (p. 69).

"If technological change and the knowledge explosion make lifelong learning increasingly necessary, they also make it increasingly possible" (Cross, 1981, p. 30). However, researchers have reported that "understanding and utilizing technology and lack of face-to-face interaction with faculty and peers" (Deggs, 2011, pp. 1547-1548) may produce a negative impact and distract from the adult learning participation.

The U.S. Army's competitive advantage directly relates to its capacity to learn faster and adapt more quickly than its adversaries. In the highly competitive global learning environment where technology provides all players nearly ubiquitous access to information, the Army cannot risk failure through complacency, lack of imagination, or resistance of change. (DA, 2011, p. 5)

Life Factors Affecting Soldiers in Reaching Their Educational Goals

Section Summary

Many of the young men and women who join the military are looking for a better life. Paramount to their success is achieving their educational goals during their time on active duty. They have resigned themselves to the fact that they must secure employment and are willing to work diligently. They all seem to want the American dream and are ready to sacrifice if it means providing a better life of opportunity for themselves and for their children. Some soldiers have obtained college credit or other credentials before entering the service. Others are using the TA benefits to meet their academic goals. However, multiple barriers may hinder their progress and prevent soldiers from fully utilizing benefits while serving on active duty. These obstacles include the following: military, personal, social, integration support, and resources.

Vacchi (2012a) concluded that “to understand today’s student veterans, it is important to understand the culture that produces veterans. Veterans come from a demanding environment, and veterans expect to meet or exceed those expectations” (p. 18). Regardless of soldiers’ aspirations of earning a college education, their most significant challenges are linked to multiple roots. Although many programs and services are available to support soldiers in their academic journey, this support either does not align with their current situation or is not designed in a way that benefits them beyond the military career.

Soldiers’ failure to complete their academic degree while on active duty does not appear to be a matter of unwillingness by organizations that are providing services to make a difference, but rather, a lack of awareness, workforce, resources, and time.

Donahue and Tibbitts' (1946) commented that military students “present a special problem to college and universities not only because of their numbers and their differences from ordinary students, but also and primarily because of special characteristics associated with their recent experiences and their maturity” (as cited in Barry et al., 2014, p. 40), which remains a relevant topic of researchers' discussions.

Another essential aspect is that the majority of soldiers in the rank of specialist are not utilizing the TA benefits due to the societal shift of college age in the U.S. According to Lumina Foundation research (2019a), “37% of college students in the U.S. are 25 or older, and 46% are first-generation college-goers” (Lumina Foundation, 2019). The sample's data and the findings from the Lumina Foundation raise the question of whether specialists in the U.S. Army are “college-ready” based on the current situation in society regarding the shift in the college student age. The NCES reported the percentage of adult students 25 years and older has remained 40% or higher since 1990 (NCES, 2019b). The NCES data also substantiate the rise in non-traditional adult enrollment in postsecondary education programs and is keeping pace with, or in some years exceeding, traditional student enrollment (Hussar & Bailey, 2016).

Other possible reasons for not using TA to the full extent to fulfill educational needs could be the following: (1) participation in the U.S. Army's loan repayment program, (2) soldiers' attainment of the desired educational level prior joining the U.S. Army, (3) soldiers' enrollment in the degree plan lined up with the military profession and TA paid by other military funding source, (4) use of scholarships, (5) use of VA educational benefits, and (6) other unknown reasons.

Recommendations

The exploratory nature of this research study imbued the research design with certain limitations and freedom to study variables that may not otherwise have been considered. The main recommendation to the U.S. Army and to any other values-based organizations that develop their leaders through VolEd is to consider carefully the complexity of life factors that soldiers as adult learners face when making policy implementation decisions that could impact degree progress and completion while serving.

Efforts should exist in exploring the factors preventing soldiers from reaching their personal and professional goals and removing barriers to maximize the results of adult learning and increase TA usage. Walters (2018) noted that “the development is learning and growing” (p. 255). The assignment to remove all the barriers for adult learners is unrealistic and is impossible. However, the U.S. Army should exercise the barrier awareness and control to the extent they are able.

Given the robustness of the dataset, future studies could attempt to target key demographic groups or a subset of soldiers specifically. Particular attention may be warranted toward addressing more targeted research questions, which would allow for tighter controls over the target population. Additionally, further analysis as to the differences between TA and non-TA users likely would yield a greater understanding and greater research avenues when helping Army education personnel better understand the barriers that soldiers face when using TA, as outlined by Cross (1981). In addition, the Army may be more appropriately served by re-evaluating the rules and expectations of

the soldiers' VolEd benchmarks for career progression within the Army, which could enhance leader development strategy.

Given the limitations of the dataset, the U.S. Army may consider tracking additional vital metrics, such as degree type and source of funding for degree attainment before entering into the Army, make mandatory degree reporting requirements, and indicate when the degree was obtained before and/or after joining the military. Another limitation exists in how BSEP completions are reported. Although GT score and MOS are related, it is unclear as to the relationship of BSEP attendance with respect to long-term academic success. Further analysis is warranted to understand the implication of successful BSEP completion and future engagement with VolEd. The dataset could be further enhanced with the inclusion of additional data points, which would help to clarify the intent of the soldier's engagement with VolEd.

An additional recommendation is to align the Army's TA GPA policy with the EIs' GPA policies to eliminate the GPA reporting discrepancies to mitigate the impact on soldiers who repay TA funding for a failed grade but still have the grade included in the TA GPA. Improvements could be made to develop the U.S. Army's education services personnel in making enhancements to their counseling approach in how VolEd fits into the broader military model, emphasizing the importance of degree completion and how CivEd leads to future opportunities within and beyond the soldier's military career, and limiting the connotation of obtaining promotion points over degree attainment as it fits into the leadership development model.

The study revealed a higher number of statistically significant interactions for non-TA users. The robustness of the data may allow for a more accurate model to reveal additional insights into the adult learning barriers.

Future Studies

This research is beneficial for all U.S. Army organizations that are committed to improving the organization. In the U.S. Army, one of its focal goals is to raise agile, self-aware, and self-adaptive leaders. This study can be replicated with other sample populations within the U.S. Army, to include ARNG and USARC. Additionally, other U.S. military branches may use this study to examine the equivalent ranks to the U.S. Army specialist. Furthermore, this study can infer the academic and practical application knowledge to the corporate and private sectors, nonprofit organizations, and other government institutions outside the U.S. Army.

Possible future areas of study are as follows:

1. Examine the group dynamics of junior-enlisted military personnel who are actively pursuing postsecondary educational opportunities with those who are not interested in furthering their education while on active duty. What will be the level of influence from both sides?
2. Does the CivEd level correlate to retention and/or attrition? What are the dynamics? Do soldiers re-enlist upon academic degree completion or separate from the military?
3. Explore the expressed interest of the U.S. military recruits to pursue VolEd opportunities upon joining the military.

4. What types of academic fields are soldiers attempting to pursue? What types of degrees does the Army need to meet the needs of the Army?
5. How does the degree level obtained in the military affect a person's life after separation in regard to civilian sector employment opportunities and the types of positions?
6. Perform a longitudinal study of enlisted U.S. Army soldiers' population of career progression and promotion rates between cohorts.
7. Explore the connection between the DoD TA usage and the VA benefits claims.
8. Study the Army's typical recruit.
9. Explore the usage of educational benefits while serving vs. after separation from the military in relation to the reasons for joining the military.
10. Study the number of degree plan changes while on active duty as they relate to academic outcomes and success rates.
11. Study the non-TA users in RA.

Conclusions

While conducting this study, the researcher gained valuable insight into various factors affecting soldiers in meeting their educational goals while serving on active duty. The key features include the U.S. Army's position on leader development, VolEd as a valuable component in the leader development model, soldiers' VolEd opportunities, and exploration of barriers in VolEd pursuit.

As an educator, the researcher is encouraged by the results of this study because the findings provide a path to increase the educational opportunities for soldiers, as well

as to remove the obstacles through collaboration, policy, and awareness. The overall goal is to improve the participation in the VolEd Programs while soldiers serve in the Army, with an ultimate focus on graduation and expansion of possibilities not only in the military, but also beyond into the civilian world. When policies align and delivery of services improve with one population, the extension or carryover to other populations often occurs concurrently or with little innovation (Habley, 2004).

Additionally, the results of this study can contribute to the U.S. Army and the VolEd community. Specifically, this research and body of knowledge was about the underserved junior-enlisted U.S. Army population in reaching their educational goals through increased participation in the TA program. The researcher hopes this study can assist in removing barriers and challenges to improve business practices; ensure high-quality, cost-effective VolEd services for soldiers; and facilitate opportunities to improve TA utilization.

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APPENDIX A: THE U.S. ARMY'S ASVAB COMPOSITE SCORES

| ASVAB Scores | Combinations of Scores |
|--|--|
| Armed Forces Qualification Test (AFQT) | Paragraph Comprehension (PC), Word Knowledge (WK), Mathematics Knowledge (MK), Arithmetic Reasoning (AR) |
| Clerical (CL) | Paragraph Comprehension (PC), Word Knowledge (WK), Mathematics Knowledge (MK), Arithmetic Reasoning (AR) |
| Combat Operations (CO) | Paragraph Comprehension (PC), Word Knowledge (WK), Auto & Shop (AS), Mechanical Comprehension (MC) |
| Electronics (EL) | General Science (GS), Arithmetic Reasoning (AR), Mathematical Knowledge (MK), Electronic Information (EI-1) |
| Field Artillery (FA) | Arithmetic Reasoning (AR), Mathematics Knowledge (MK), Mechanical Comprehension (MC) |
| General Maintenance (GM) | General Science (GS), Auto & Shop (AS), Mathematics Knowledge (MK), Electronics Information (EI-1) |
| General Technical (GT) | Word Knowledge (WK), Paragraph Comprehension (PC), Arithmetic Reasoning (AR) |
| Mechanical Maintenance (MM) | Auto & Shop (AS), Mechanical Comprehension (MC), Electronic Information (EI-1) |
| Operators and Food (OF) | Word Knowledge (WK), Paragraph Comprehension (PC), Auto & Shop (AS), Mechanical Comprehension (MC) |
| Surveillance and Communications (SC) | Word Knowledge (WK), Paragraph Comprehension (PC), Arithmetic Reasoning (AR), Auto & Shop (AS), Mechanical Comprehension (MC) |
| Skilled Technical (ST) | Word Knowledge (WK), Paragraph Comprehension (PC), General Science (GS), Mechanical Comprehension (MC), Mathematics Knowledge (MK) |

Note. Adapted from the Go Army website page titled “Understanding the ASVAB.” Retrieved on October, 25, 2019, from <https://www.goarmy.com/learn/understanding-the-asvab.html>

APPENDIX B: ARMY MOS

00D = Special Duty Assignment
00E = Sergeant Major (SGM) Immaterial
00F = MOS Immaterial National Guard Bureau (NGB)
00G = MOS Immaterial USAR
00J = Command Sergeant Major (CSM) Engineer/Signal/Military Police/Intelligence Immaterial
00K = CSM Maneuver Support/Logistics
00L = CSM Logistics
00P = CSM Force Sustainment
00R = CSM Infantry/Armor Immaterial
00S = Special Duty Assignment
00T = CSM Infantry/Armor/Field Artillery/Combat Engineer Immaterial
00X = CSM Immaterial
00Z = SGM Nominative
09B = Trainee Unassigned
09C = Trainee Language
09D = College Trainee
09E = Trainee Language
09G = NG on Active Duty Medical Hold
09H = USAR on Active Duty Med Hold
09J = GED Completion Program
09L = Interpreter/Translator
09M = Delayed Trainee
09N = Nurse Corps Candidate
09Q = Army Legal Immigrant Healthcare Professional Officer Candidate
09R = Simultaneous Member Program
09S = Commissioned Officer Candidate
09T = College Student Army National Guard Officer Program
09U = Unqualified in Authorized Army MOS
09W = WO Candidate
11B = Infantryman
11C = Indirect Fire Infantryman
11X = Infantry Recruit
11Z = Infantry Senior SGT
12A = Engineer Senior SGT
12B = Combat Engineer
12C = Bridge Crewmember
12D = Diver
12G = Quarrying Specialist
12H = Construction Engineering Supervisor
12K = Plumber
12M = Firefighter
12N = Horizontal Construction Engineer
12P = Prime Power Production Specialist

12Q = Power Line Distribution Specialist
 12R = Interior Electrician
 12T = Technical Engineer
 12W = Carpentry and Masonry Specialist
 12X = General Engineering Supervisor
 12Y = Geospatial Engineer
 12Z = Combat Engineering Senior SGT
 13B = Cannon Crewmember
 13F = Fire Support Specialist
 13J = Fire Control Specialist
 13M = Multiple Launch Rocket System/High Mobility Artillery Rocket System
 Crewmember
 13R = Weapons Locating Radar Specialist
 13X = Field Artillery Computer Systems Specialist
 13Z = Field Artillery Senior Sergeant
 14E = Patriot Fire Control Enhanced Operator/Maintainer
 14G = Air Defense Battle Management System Operator
 14H = Air Defense Enhanced Early Warning Operator
 14P = Air and Missile Defense Crewmember
 14S = Avenger Crewmember
 14T = Patriot Launching Station Enhanced Operator/Maintainer
 14X = Space and Missile Defense Operations
 14Z = Air Defense Artillery Senior SGT
 15B = Aircraft Powerplant Repairer
 15C = Mq-1 Operator
 15D = Aircraft Powertrain Repairer
 15E = Rq-7 Repairer
 15F = Aircraft Electrician
 15G = Aircraft Structural Repairer
 15H = Aircraft Pneudraulics
 15J = Oh-58d Armament/Electrical/Avionics Systems Repairer
 15K = Aircraft Components Repair Supervisor
 15L = Armament/Electrical/Avionics Repair Supervisor
 15N = Avionic Mechanic
 15P = Aviation Operations Specialist
 15Q = Air Traffic Control Operator
 15R = Ah-64 Attack Helicopter Repairer
 15S = Oh-58d Helicopter Repairer
 15T = Uh-60 Helicopter Repairer
 15U = Ch-47 Helicopter Repairer
 15W = Rq-7 Operator
 15X = Ah-64a Armament/Elect
 15Y = Ah-64d Armament/Electrical/Avionic System Repairer
 15Z = Aircraft Senior Sergeant
 17C = Cyber Operations Specialist
 17E = Electronic Warfare Specialist

18B = Special Forces Weapons SGT
18C = Special Forces Engineer SGT
18D = Special Forces Medical SGT
18E = Special Forces Communications SGT
18F = Special Forces Assistant Operations and Intelligence SGT
18X = Special Forces Recruit
18Z = Special Forces Senior SGT
19D = Cavalry Scout
19K = M1 Armor Crewman
19Z = Armor Senior SGT
25B = Information Technology Specialist
25C = Radio Operator-Maintainer
25D = Cyber Network Defender
25E = Electromagnetic Spectrum Manager
25L = Cable Systems Installer-Maintainer
25M = Multimedia Illustrator
25N = Nodal Network Systems Operator-Maintainer
25P = Microwave Systems Operator-Maintainer
25Q = Multichannel Transmission Systems Operator-Maintainer
25R = Visual Information Equipment Operator-Maintainer
25S = Satellite Communication Systems Operator-Maintainer
25T = Satellite Microwave Systems Chief
25U = Signal Support Systems Specialist
25V = Combat Documentation/Production Specialist
25W = Telecommunications Operations Chief
25X = Chief Signal NCO
25Z = Visual Information Operations Chief
27D = Paralegal Specialist
31B = Military Police
31D = CID Special Agent
31E = Internment/Resettlement Specialist
31K = Military Working Dog Handler
31Z = Senior Military Police Sergeant
35F = Intelligence Analyst
35G = Geospatial Intelligence Imagery Analyst
35L = Counter Intelligence Agent
35M = Human Intelligence Collector
35N = Signals Intelligence Analyst
35P = Signal Intelligence
35Q = Cryptologic Cyberspace
35S = Signals Collector/Analyst
35T = Military Intelligence Systems Maintainer/Integrator
35V = Signals Intelligence Senior SGT/Chief
35W = Military Intelligence Linguist
35X = Intelligence Senior Sergeant/Chief Intelligence SGT
35Y = Chief Counter Intelligence/Human Intelligence Senior SGT

35Z = Intelligence Sergeant Major
36B = Financial Management Technician
37F = Psychological Operations Specialist
38B = Civil Affairs Specialist
42A = Human Resources Specialist
42R = Musician
42S = Special Band Musician
46S = Public Affairs Mass Communication Specialist
46Z = Chief Public Affairs NCO
51C = Acquisition, Logistics and Technology Contracting NCO
56M = Religious Affairs Specialist
68A = Biomedical Equipment Specialist
68B = Orthopedic Specialist
68C = Practical Nursing Specialist
68D = Operating Room Specialist
68E = Dental Specialist
68F = Physical Therapy Specialist
68G = Patient Administration Specialist
68H = Optical Laboratory Specialist
68J = Medical Logistics Specialist
68K = Medical Laboratory Specialist
68L = Occupational Therapy Specialist
68M = Nutrition Care Specialist
68N = Cardiovascular Specialist
68P = Radiology Specialist
68Q = Pharmacy Specialist
68R = Veterinary Food Inspection Specialist
68S = Preventive Medicine Specialist
68T = Animal Care Specialist
68U = Ear, Nose and Throat (ENT) Specialist
68V = Respiratory Specialist
68W = Combat Medic Specialist
68X = Behavioral Health Specialist
68Y = Eye Specialist
68Z = Chief Medical NCO
74D = Chemical, Biological, Radiological and Nuclear Specialist
79R = Recruiter
79S = Career Counselor
79T = Recruiting and Retention NCO (ARNG)
79V = Retention and Transition NCO, USAR
88H = Cargo Specialist
88K = Watercraft Operator
88L = Watercraft Engineer
88M = Motor Transport Operator
88N = Transportation Management Coordinator
88U = Railway Specialist (ARNG/USAR)

88Z = Transportation Senior Sergeant
 89A = Ammunition Stock Control and Accounting Specialist
 89B = Ammunition Specialist
 89D = Explosive Ordnance Disposal Specialist
 91A = M1 Abrams Tank System Maintainer
 91B = Wheeled Vehicle Mechanic
 91C = Utilities Equipment Repair
 91D = Tactical Power Generation Specialist
 91E = Allied Trades Specialist
 91F = Small Arms/Towed Artillery Repairer
 91H = Track Vehicle Repairer
 91J = Quartermaster and Chemical Equipment Repairer
 91L = Construction Equipment Repairer
 91M = Bradley Fighting Vehicle System Maintainer
 91P = Artillery Mechanic
 91S = Stryker Systems Maintainer
 91X = Maintenance Supervisor
 91Z = Mechanical Maintenance Supervisor
 92A = Automated Logistical Specialist
 92F = Petroleum Supply Specialist
 92G = Culinary Specialist
 92L = Petroleum Laboratory Specialist
 92M = Mortuary Affairs Specialist
 92R = Parachute Rigger
 92S = Shower and Laundry Specialist
 92W = Water Treatment Specialist
 92Y = Unit Supply Specialist
 92Z = Senior Noncommissioned Logistician
 94A = Land Combat Electronic Missile System Repairer
 94D = Air Traffic Control Equipment Repairer
 94E = Radio Equipment Repairer
 94F = Computer Detection Systems Repairer
 94H = Test, Measurement, and Diagnostic Equipment Maintenance Support Specialist
 94M = Radar Repairer
 94P = Multiple Launch Rocket System Repairer
 94R = Avionic and Survivability Equipment Repairer
 94S = Patriot System Repairer
 94T = Avenger System Repairer
 94W = Electronic Maintenance Supervisor
 94Y = Integrated Family of Test Equipment Operator and Maintainer
 94Z = Senior Electronic Maintenance Supervisor

Note: Department of the Army (DA). (2019e). MOS (PAM 611-21). Washington, DC: Author. Retrieved from <https://www.milsuite.mil/book/groups/smartbookdapam611-21>

APPENDIX C: WESTERN KENTUCKY UNIVERSITY (WKU) IRB APPLICATION



Institutional Review Board
Office of Research Integrity
301 Wetherby Administration Building
270-745-3360

APPLICATION FOR APPROVAL OF INVESTIGATIONS INVOLVING THE USE OF HUMAN SUBJECTS

The human subject's application must stand alone. This form is documentation of the formal design or plan of research activity submitted to the Western Kentucky University Institutional Review Board. Failure to provide all required information will result in correction. Informed consent document(s), survey instrument, and site approval / cooperation letter(s), should be attached to the application and referred to in your write up of the appropriate sections so that reviewers may read them as they read your application. Thesis proposals or other documents that are meant to substitute for completing the sections of the application will not be read and should not be attached. All documents must be submitted through IRBNet.org for review. Additional information on the process can be found at <https://www.wku.edu/compliance/>. New application materials are to be found in IRBNet.org in the Forms and Templates section.

Consolidate files when possible to expedite the review process of a submission. Do not convert any portion of this document to .pdf format. As of 11/20/2015, **Unauthorized use of the WKU IRB approval stamp by any other than a WKU IRB Compliance Officer will be just cause for suspension of ALL new WKU IRB approvals for a period of up to 2 years for the offending researcher(s).**

1. Principal Investigator's Name: __ Irina Rader __
Email Address: __ irina.rader718@topper.wku.edu __
Mailing Address: __ 10508 Glenmary Farm Drive, Louisville KY 40291 __

Department: __ EDD Student __ Phone: __ (502) 403-3671 __
Completion of the Citi Program Training? ☒ Yes ☐ No (double click on box)
Found at www.citiprogram.org Date WKU CITY 01/27/2019 and RCR 06/07/2019
Co-Investigator: Dr. Randy Capps
Email Address: __ randy.capps@wku.edu __
Mailing Address: __ 1906 College Heights Blvd. #91030, Bowling Green, KY 42101 __
Department: __ EDD __ Phone: __ (270) 745-4160 __
Completion of the Citi Program Training? ☒ Yes ☐ No
Found at www.citiprogram.org Date _____

2. If you are a **student**, provide the following information:

Faculty Sponsor: __ Dr. Randy Capps __ Department: __ EDD __ Phone: __ (270) 745-4160 __

Faculty Mailing Address: 1906 College Heights Blvd. #91030, Bowling Green, KY 42101

Completion of the Citi Program Training? ☒ Yes ☐ No

Found at www.citiprogram.org Date 5/18/16 _____

Student Permanent Address (where you can be reached 12 months from now):

_10508 Glenmary Farm Drive, Louisville, KY 40291 _

Is this your capstone, thesis, or dissertation research? ☒ Yes ☐ No

Policy of Research Responsibility. The Western Kentucky University Institutional Review Board defines the responsible party or parties of the research project as the Principal Investigator and Co- Principal Investigator. In those cases when a student holds the title of Principal Investigator, the Faculty Sponsor (Advisor, Supervisor, Administrator, or general managing Council) will conduct oversight of the research project and share in the accountability to assure the responsible conduct of research. Researchers outside of the Western Kentucky University campus system are required to provide proof of training to obtain approval for WKU Human Subjects protocols. This proof must be presented by the Compliance Official at the researcher's institution to the WKU Compliance official. When no training requirement exists at the researcher's host institution, training must be conducted through affiliation of Western Kentucky University CITI Program.org requirements. WKU faculty, staff, and students are required to complete the CITI Program Training modules outlined by the WKU IRB.

3. Project Period: Start upon IRB approval End 3/31/2020
month, day, year

***Note:** Your project period may not start until after the IRB has given final approval.*

4. Has this project previously been considered by the IRB? ☐ Yes ☒ No

If yes, give approximate date of review:

5. Do you or any other person responsible for the design, conduct, or reporting of this research have an economic interest in, or act as an officer or a director of, any outside entity whose financial interests would reasonably appear to be affected by the research?

☐ Yes ☒ No

If "yes," please include a statement below that may be considered by the Institutional Conflict of Interest Committee:

6. Is a proposal for **financial support** being submitted regarding this protocol? ☐ Yes

☒ No

If yes, you must submit a reference number or acknowledgment any funding proposal(s) as soon as it is available and complete the following:

a. Is notification of Human Subject approval required? ☐ Yes ☒ No

b. Is this a renewal application? ☐ Yes ☒ No

c. Sponsor's Name: N/A

d. Project Period: From: To:

7. **Clinical Research:** a) Does the study involve human participants? ☐ Yes ☒ No

b) Are the participants prospectively assigned to an intervention? ☐ Yes ☒ No

c) Is the study designed to evaluate the effect of the intervention on the participants?
☐ Yes ☒ No

d) Is the effect that will be evaluated a **health-related** biomedical or behavioral outcome?
☐ Yes ☒ No

Research thresholds that will require review by Biomedical IRB in association with a SMART IRB Participating Institution (such as the University of Kentucky Medical School or The Medical Center of Bowling Green, KY)

Clinical studies of drugs and medical devices only when condition (a) or (b) is met.

- (a) Research on drugs for which an investigational new drug application (21 CFR Part 312) is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review.)

Research on medical devices for which (i) an investigational device exemption application (21 CFR Part 812) is not required; or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.

Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows:

- (a) from healthy, nonpregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week; or from other adults and children [2], considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8-week period and collection may not occur more frequently than 2 times per week.

Prospective collection of biological specimens for research purposes by noninvasive means.

Examples: (a) hair and nail clippings in a nondisfiguring manner; (b) deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction; (c) permanent teeth if routine patient care indicates a need for extraction; (d) excreta and external secretions (including sweat); (e) uncannulated saliva collected either in an unstimulated fashion or stimulated by chewing gumbase or wax or by applying a dilute citric solution to the tongue; (f) placenta removed at delivery; (g) amniotic fluid obtained at the time of rupture of the membrane prior to or during labor; (h) supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques; (i) mucosal and skin cells collected by buccal scraping

or swab, skin swab, or mouth washings; (j) sputum collected after saline mist nebulization.

Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving x-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are not generally eligible for expedited review, including studies of cleared medical devices for new indications.)

Examples: (a) physical sensors that are applied either to the surface of the body or at a distance and do not involve input of significant amounts of energy into the subject or an invasion of the subject's privacy; (b) weighing or testing sensory acuity; (c) magnetic resonance imaging; (d) electrocardiography, electroencephalography, thermography, detection of naturally occurring radioactivity, electroretinography, ultrasound, diagnostic infrared imaging, doppler blood flow, and echocardiography; (e) moderate exercise, muscular strength testing, body composition assessment, and flexibility testing where appropriate given the age, weight, and health of the individual.

8. Does this project SOLELY involve analysis of an existing database? ☒ Yes ☐ No

If yes, please provide the complete URLs for all databases that are relevant to this application, then complete Section A and the signature portion of the application and forward the application to the Office of Research Integrity through IRBNet.org.

If the database is not available in an electronic format readily available on the internet, please provide evidence that the data were collected using procedures that were reviewed and approved by an Institutional Review Board, then complete Section A and the signature portion of the application and forward the application to the Office of Research Integrity through IRBNet.org.

GoArmyEd Data Warehouse (www.goarmyed.com) will be used for this research. In addition, the U.S. Army's Total Army Database – Enlisted (TAPDB-E) will be utilized for demographics. Approval to use the U.S. Army's data is obtained. See Letter of Support for more information.

9. Is there a plan to publish or present the findings from the research outside the department or university? ☐ Yes ☒ No

10. Any **changes to the protocol** after the approval process will **require the use of the Continuing Review Form**. This document is found in IRBNet.org Forms & Templates.

In the space below, please provide complete answers to the following questions. Add additional space between items as needed.

You must include copies of all pertinent information such as, a copy of the questionnaire you will be using or other survey instruments, informed consent documents, letters of approval from cooperating institutions (e.g., schools, hospitals or other medical facilities

and/or clinics, human services agencies, individuals such as physicians or other specialists in different fields, etc.), copy of external support proposals, etc. *(to be placed at the end of the application document)*.

The WKU IRB requires research that will occur through the cooperation of an outside organization to first have a verifiable letter of cooperation (or a complete email correspondence printed to .pdf that shows means that will allow verification - such as email addresses still attached/screen print) showing the organization will be cooperative or willing to let the research team approach clients, patrons, employees, or passersby.

The research activities may bother some organizations by irritating clients, or aggravating customers. The organization must show a prior awareness of the research activity and be willing to express their cooperation to allow the research to occur on or through their organization.

11. PROPOSED RESEARCH PROJECT

A. Provide a brief summary of the proposed research. Include major hypotheses and research design. *(Describe in layman's terms in order to allow interdisciplinary review)*

The research design of this non-experimental quantitative study is exploratory. This study is centered on answering the following central research question: To what extent are the U.S. Army junior-enlisted soldiers (E-4s) using Tuition Assistance (TA) on Active Duty?

Three additional research questions to this exploratory study are the following:

Is there a difference in the TA usage in the U.S. Army junior-enlisted soldiers on Active Duty based on gender?

Do the TA usage of the U.S. Army junior-enlisted soldiers differ based in Military Occupational Specialty (MOS)?

To what extent the Armed Services Vocational Aptitude Battery (ASVAB) or the Armed Forces Classification Test (AFCT) General Technical (GT) scores are affecting the TA usage of the U.S. Army junior-enlisted soldiers on Active Duty?

The four exploratory questions are rooted in the applied reality that all eligible junior-enlisted soldiers must meet basic the U.S. Army TA eligibility requirements. Other preconditions that help define the TA eligibility is meeting the training/education prerequisite by completion of Advanced Individual Training (AIT) and possess no military related academic holds.

B. Describe the source(s) of intended subjects and the selection criteria. Specifically, how will you obtain subjects, and how will you contact them? **Further describe any potential conflict of interest or problem of undue influence** that may be encountered through the protocol.

Are the subjects – under 18 years of age, pregnant women, prisoners, or fetus/neonates?

☐ Yes ☒ No

Are the subjects – cognitively impaired, economically, educationally, medically disadvantaged? ☐ Yes ☒ No

Are the subjects – unable to speak, read, or understand the English language?

☐ Yes ☒ No

Any “Yes” indication above will require the Faculty Sponsor to submit and upload application documents into IRBNet.org and to the WKU IRB. Applications from students with “Yes” indications will not be accepted.

C. Informed consent: Describe the consent process and attach all consent documents. (formatted samples are included below)

D. Procedures: Provide a step-by-step description of each procedure, including the frequency, duration, and location of each procedure.

This research will be using the pre-existing data stored in GoArmyEd Data Warehouse and the U.S. Army’s Total Army Database – Enlisted (TAPDB-E).

E. How will confidentiality of the data be maintained? (Note: Data must be securely kept for a minimum of three years on campus, and describe how participants will be protected).

Data will be downloaded from GoArmyEd Data Warehouse and TAPDB-E into excel and STATA. The Personally Identifiable Information will not appear in any reports as they will be automatically removed from the data leaving only a code with no way to identify any individuals. This concept provides the highest level of confidentiality.

All original data will remain in the Department of Defense computer and will be stored under Army Continuing Education Division’s Quality Assurance over watch for a minimum of three years. All data downloads and reports from GoArmyEd and TAPDB-E will be coded and labeled. Any computers used to conduct statistical analysis of coded data will be password protected. If any coded data has to be e-mailed from CGSC to the researcher, then all e-mails will be encrypted.

F. Describe all known and anticipated risks to the subject including side effects, risks of placebo, risks of normal treatment delay, etc. **Describe how any potential conflict of interest or problem of undue influence** that may be encountered through the protocol will be handled.

This is a non-experimental based study. Thus, there are no known risks in this study. The researcher will protect the rights of human research subjects and will comply with the following: the Belmont Report, 32 CFR 219; 10 USC 980; DoDI 3216.02; where applicable 45 CFR 160 and 164; where applicable 45 CFR 46 (Subparts B, C, and D) under the authority of the DoD; and other Federal, State and local laws as they may relate to proposed human subjects research.

The researcher is aware of the Joint Ethics Regulation, DoDI 5500.7-R, specifically areas, addressing investigators relationships with sponsoring companies including monies received for research protocols. The researcher understands that financial and other conflicts of interest must be reported to the CGSC Human Protections Administrator (HPA) and the Collaborative Academic Institutional Review Board (CAIRB). There are no known conflicts of interest related to this study.

G. Describe the anticipated benefits/incentives to subjects, and the importance of the knowledge that may reasonably be expected to result. **All Participant incentives MUST be approved**

prior to data collection and incentive distribution. Changes must be approved prior to participant recruitment into the study. NO EXCEPTIONS.

Research that examines the factors affecting the junior-enlisted soldiers in reaching their educational goals and the utilization of the TA benefits provide the opportunity to analyze the applicability of factors and the TA usage in relation to academic degree completion. This research will provide an organizational awareness and social-awareness enabling feedback. The proven U.S. Army's Tuition Assistance program is not broken, and this research endeavor only attempts to help determine if the U.S. Army's Tuition Assistance Program should emphasis a focus on factors in junior-enlisted soldiers' academic success. There are no known quantitative or qualitative studies that have purposefully measured the factors in regards of degree completion of any sample from the United States Army.

H. List of references (if applicable):

Please see attachment titled "References" for list of sources used for this study.

Additions to or changes in procedures involving human subjects, as well as any problems connected with the use of human subjects once the project has begun, must be brought to the attention of the IRB as they occur.

Use the Continuing Review Form to describe changes, requests for additional time to collect data, or adverse events.

Do Not separate Informed Consent forms from this application when uploading submission documents.

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Are the subjects – unable to speak, read, or understand the English language?

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Any “Yes” indication above will require the Faculty Sponsor to submit and upload application documents into IRBNet.org and to the WKU IRB. Applications from students with “Yes” indications will not be accepted.

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F.Describe all known and anticipated risks to the subject including side effects, risks of placebo, risks of normal treatment delay, etc. **Describe how any potential conflict of interest or problem of undue influence** that may be encountered through the protocol will be handled.

This is a non-experimental based study. Thus, there are no known risks in this study. The researcher will protect the rights of human research subjects and will comply with the following: the Belmont Report, 32 CFR 219; 10 USC 980; DoDI 3216.02; where applicable 45 CFR 160 and 164; where applicable 45 CFR 46 (Subparts B, C, and D) under the authority of the DoD; and other Federal, State and local laws as they may relate to proposed human subjects research.

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There are no known conflicts of interest related to this study.

G.Describe the anticipated benefits/incentives to subjects, and the importance of the knowledge that may reasonably be expected to result. **All Participant incentives MUST be approved prior to data collection and incentive distribution. Changes must be approved prior to participant recruitment into the study. NO EXCEPTIONS.**

Research that examines the factors affecting the junior-enlisted soldiers in reaching their educational goals and the utilization of the TA benefits provide the opportunity to analyze the applicability of factors and the TA usage in relation to academic degree completion. This research will provide an organizational awareness and social-awareness enabling feedback. The proven U.S. Army's Tuition Assistance program is not broken, and this research endeavor only attempts to help determine if the U.S. Army's Tuition Assistance Program should emphasis a focus on factors in junior-enlisted soldiers'

academic success. There are no known quantitative or qualitative studies that have purposefully measured the factors in regards of degree completion of any sample from the United States Army.

H.List of references (if applicable):

Please see attachment titled “References” for list of sources used for this study.

Additions to or changes in procedures involving human subjects, as well as any problems connected with the use of human subjects once the project has begun, must be brought to the attention of the IRB as they occur.

Use the Continuing Review Form to describe changes, requests for additional time to collect data, or adverse events.

Do Not separate Informed Consent forms from this application when uploading submission documents.

APPENDIX D: WKU IRB APPROVAL LETTER



DATE: September 6, 2019

INSTITUTIONAL REVIEW BOARD OFFICE OF RESEARCH INTEGRITY

TO: Irina Rader

FROM: Western Kentucky University (WKU) IRB

PROJECT TITLE: [1481187-1] Life Factors Affecting U.S. Army Junior soldiers in Reaching Their Educational Goals.

REFERENCE #: 20-033

SUBMISSION TYPE: New Project

ACTION: APPROVED APPROVAL DATE: September 6, 2019

REVIEW TYPE: Exempt Review

Thank you for your submission of New Project materials for this project using pre-existing data. The Western Kentucky University (WKU) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Exempt Review based on the applicable federal regulation. Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a MINIMAL RISK project.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Robin Pyles at (270) 745-3360 or irb@wku.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Western Kentucky University (WKU) IRB's records.

APPENDIX E: U.S. ARMY HUMAN RESOURCES ARMY CONTINUING EDUCATION DIVISION LETTER OF SUPPORT



DEPARTMENT OF THE ARMY
U.S. ARMY HUMAN RESOURCES COMMAND
1600 SPEARHEAD DIVISION AVENUE
FORT KNOX, KY 40122


AHRC-PDE

21 Aug 2019

MEMORANDUM FOR Irina Rader, Western Kentucky University (WKU), 1906 College Heights Blvd., Bowling Green, KY 42101

SUBJECT: Letter of Support

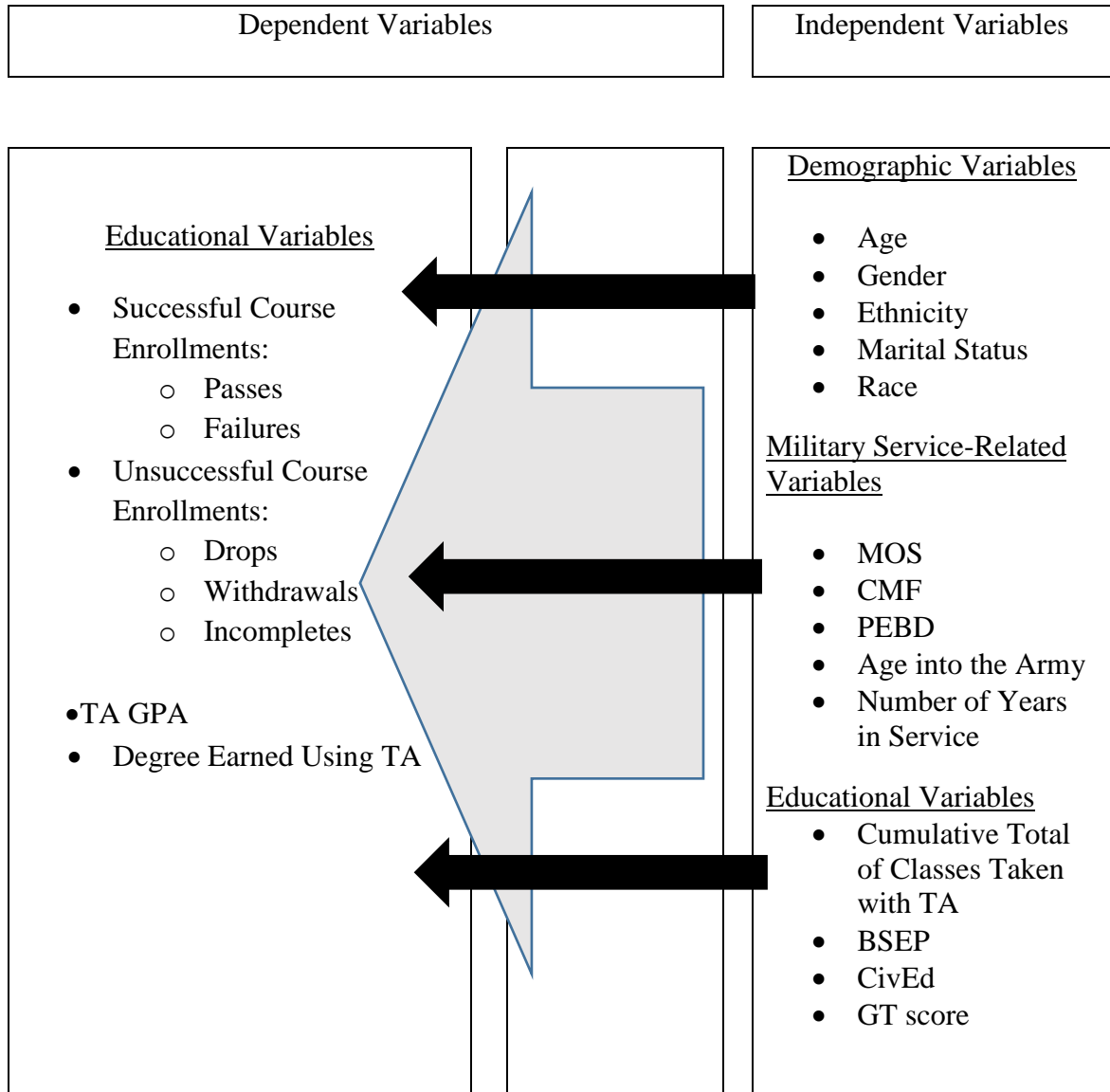
1. The United States Army Human Resources Command (HRC) the Adjutant General Directorate, Army Continuing Education Division supports Ms. Irina Rader's request for research concerning examining the factors affecting the junior enlisted Soldiers (E4s) in meeting their educational goals. This research is being conducted as part of a doctoral dissertation at Western Kentucky University.
2. Final approval for research must be routed through the WKU Institutional Review Board (IRB). The Protocol must meet the requirements of DoDI. 3216.02.
3. Upon WKU IRB's approval, Ms. Irina Rader, GS-13, (502) 613-8245 is authorized to begin data collection utilizing GoArmyEd and ITAPDB.
4. WKU IRB must complete the Institutional Agreement and the Researcher must complete the individual researcher agreement.
5. The point of contact for this Memorandum is Mr. Steve Clair, Deputy Chief-Army Continuing Education Division, Branch Chief-Policy, Programs, and Incentives, steven.b.clair.civ@mail.mil, 502-613-8548.


PAMELA L. RAYMER, E&D
Chief
Army Continuing Education Division
U.S. Army Human Resources Command

DISTRIBUTION:

1-Individual
1-WKU IRB
1-Organization

APPENDIX F: VARIABLE DEFINITIONS AND LOGIC MODEL



According to Mertler (2019), “variables are any factors that may affect the outcome of a study or characteristics that are central to the topic or problem being addressed” (p. 306). “Significant elements to be taken forward to the integrative approach include the role of educational attainment and skill level, age, gender,

employment status, occupational status, income, work-life balance, social and cultural capital and place of living” (Boeren, 2016, p. 95).

In the interest of the study, the relationships within the demographic, military service- related, and educational factors groups were examined. In addition, the relationships within the various factors in different groups were explored against the dependent variable(s) identified as shown in Logic Model.

The educational dependent variables were Successful Course Enrollments to include Passes and Failures; Unsuccessful Course Enrollments, including Drops, Withdrawals, and Incompletes; TA GPA, and Number of Degrees Earned Utilizing TA.

Demographic Variables

Current Age = Soldier’s age on the date when the data were pulled from ITAPDB

(September 30, 2019)

DOB = Soldier’s birth year

Ethnic Group = A self-reported category of people with whom soldier identifies on the basis of a presumed ancestry

Marital Status = Soldier’s state of being single or married. Single category includes annulled, divorced, legally separated, single, or widowed.

Race = A self-reported category of people with whom soldier identifies on the basis on physical similarities within groups

Military Service-Related Variables

Age into the Army = Soldier’s age when enlisting into the Army

Career Management Field (CMF) = Broad category of soldier’s occupational career field in the U.S. Army. A manageable grouping of related MOS that provides visible

and logical progression to grade SGM (DA, 2018f). Currently, the U.S. Army has 25 CMFs within ITAPDB.

Military Occupational Specialty (MOS) (enlisted) = Soldier's job in the Army. The grouping of duty positions requiring similar qualifications, and the performance of closely related duties (DA, 2018f). The MOS identifies a group of duty positions that requires closely related skills (DA, 2017e). Multiple MOSs with related occupational groupings fall under a single CMF.

Pay Entry Basic Date (PEBD) = Date on which soldier officially enters the military. For this study PEBD represents only a calendar year.

Number of Years in Service = Number of years soldier has served in the Army

Educational Variables

Cumulative Total Number of Classes Taken with TA = Total cumulative number of class enrollments, including Passes, Failures, Incompletes, Drops, and Withdrawals from FY 2016 through FY 2019

BSEP Completion = Completion of the U.S. Army's program designed to provide lessons addressing three specific AFCT subtests that comprise the GT score: Word Knowledge, Paragraph Comprehension, and Arithmetic Reasoning (DA, 2017e)

CivEd = Soldier's civilian education level verified and recognized by the Army

Degree Completion using TA = The EI's degree requirements completed using TA funding for at least one or more courses

Drop = Soldier's disenrollment from the EI's course in GoArmyEd prior to the course start date

Grade Point Average (GPA) = Colleges assign numerical value to letter grades

(A = 4.00; B = 3.00; C = 2.00; D = 1.00; F = 0.00). “The GPA is the mathematical average of these numerical values” (Phillips, 2000, p. 225).

Soldiers’ TA GPAs derive from all graded classes taken through GoArmyEd or a legacy Army education system.

General Technical (GT) Score = GT score includes Word Knowledge, Paragraph

Comprehension, and Arithmetic Reasoning subtest scores, that are used to determine soldier’ eligibility for various MOS in the U.S. Army.

Incompletes = Soldier’s participation in the EI course is incomplete. Soldier was unable to meet the course completion requirements by the time the class finished.

Failures = Grades below “C” for Undergraduate and below “B” for Graduate courses.

“Failing” grade description is determined by the U.S. Army’s Policy, outlined in AR 621-5 (DA, 2019c).

Passes = Grades “C” and above for undergraduate and “B” and above for Graduate

courses. “Passing grade” description is determined by the U.S. Army’s Policy, outlined in AR 621-5 (2019).

Successful Course Enrollments = The number of successful class completions, wherein

the class finished and a grade is posted. Dataset includes Passes and Failures.

Unsuccessful Course Enrollments = The number of unsuccessful class completions, to

include Drops, Withdrawals, and Incomplete grades

Withdrawal = Soldier’s voluntary or involuntary disenrollment from the EI’s Course in

GoArmyEd after the class start date, due to personal or military reasons

APPENDIX G: VARIABLES CODING IN STATA

| Name | Label |
|----------------------------|-----------------------------|
| GenderCode | Gender Code |
| EthnicGroupCode | Ethnic Group Code |
| RacePopulationCode | Race Population Code |
| MaritalStatusCodeYN | Marital Status Code YN |
| PEBD | Pay Entry Basic Data (Year) |
| AgeintoArmy | Age into Army |
| CurrentAge | Current Age |
| AgeCategory | Age Category |
| NumberofYearsinService | Number of Years in Service |
| CivEd | Civilian Education Level |
| CivilianEducationLevelCode | Civilian Education |
| GTscore | GT score |
| MOSCategoryCode | MOS Category Code |
| Drops | Drops |
| Failures | Failures |
| Incompletes | Incompletes |
| Passes | Passes |
| Withdrawals | Withdrawals |
| GPA | TA GPA |
| GPAClassCount | GPA Class Count |
| BSEPIssued | BSEP Issues |
| BSEPConfirmed | BSEP Confirmed |
| BSEPVerified | BSEP Verified |
| BSEPCompleted | BSEP Completed |
| BSEPTotalLengthofClass | BSEP Total Length of Class |
| CMF_n | Career Management Field |

APPENDIX H: DEMOGRAPHIC VARIABLES CODEBOOK

“Codebook is a list of variables indicating how the responses for each item are coded for statistical analysis” (Mertler, 2019, p. 296).

| Variable Name | Variable Description | Measure | Values |
|---------------|-------------------------|---------|--|
| Age | Age of soldier | Ratio | 0 = 18-21 1 = 22 to 25 2 = 26 to 29 3 = 30 or older |
| Ethnicity | Soldier’s ethnic origin | Nominal | 0 = Allute 1 = Chinese 2 = Cuban 3 = Eskimo 4 = Filipino 5 = Guamanian 6 = Indian 7 = Japanese 8 = Korean 9 = Latin American with Hispanic decent 10 = Melanesian 11 = Mexican 12 = Micronesian 13 = None 14 = Other 15 = Other Asian Decent 16 = Other Hispanic Decent 17 = Other Pacific Island Decent 18 = Polynesian 19 = Puerto Rican 20 = U.S. Canadian /Indian 21 = Vietnamese |
| Gender | Soldier’s gender | Nominal | 0 = Male 1 = Female |

| Variable Name | Variable Description | Measure | Values |
|----------------|---|---------|--|
| Marital status | Soldier's marital status | Nominal | 0 = Single (to include Annulled, Divorced, Legally Separated, Single, Widowed) 1 = Married |
| Race | Soldier's self-reported racial category | Ordinal | 0 = American Indian or Alaska Native 1 = Asian/Pacific Islander 2 = Black 3 = Other 4 = Unknown 5 = White |

Note: Adapted from “Advanced and multivariate statistical methods: Practical application and interpretation” (6th ed.), by C. A. Mertler & R. A. Vannatta, 2017. New York, NY: Routledge.

APPENDIX I: MILITARY SERVICE-RELATED VARIABLES CODEBOOK

| Variable | Variable Description | Measure | Values |
|-------------------------|---|---------|---|
| Number Years in Service | Number of years the soldier served to date | Ordinal | 0 is the lowest value 22 is the highest value |
| PEBD | Year when person joined the Active Duty Service | Nominal | Date formatting (YYYY) |
| CMF | Soldier's Career Management Field (broad job category on Active Duty) | Nominal | 1 = 09 – Reporting 2 = 11 – Infantry 3 = 12 – Engineer 4 = 13 – Field Artillery 5 = 14 – Air Defense 6 = 15 – Aviation 7 = 17 – Cyber Operations 8 = 18 – Special Forces 9 = 19 – Armor 10 = 25 – Communications 11 = 27 – Paralegal 12 = 31 – Military Police 13 = 35 – Military Intelligence 14 = 36 – Financial Management 15 = 37 – Psychological Operations 16 = 42 – Adjutant General 17 = 46 – Public Affairs 18 = 56 – Chaplains 19 = 68 – Medical 20 = 74 – Chemical/Biological/Radiological 21 = 88 – Transportation 22 = 89 – Ammunition 23 = 91 – Mechanical maintenance 24 = 92 – Supply and Services 25 = 94 – Electronic maintenance |

Note: Adapted from “Advanced and multivariate statistical methods: Practical application and interpretation” (6th ed.), by C. A. Mertler & R. A. Vannatta, 2017. New York, NY: Routledge. MOS area of concentration was used vs. actual list of MOSs. The 25 areas of concentration were utilized vs. 150 actual U.S. Army MOSs.

APPENDIX J: EDUCATIONAL VARIABLES CODEBOOK

| Variable | Variable Description | Measure | Values |
|---|---|---------|---|
| GPA | Soldier's TA GPA | Ordinal | 0.00 = lowest; 4.00 is the highest |
| CivEd | Soldier's highest degree obtained | Ordinal | 0 = High School or GED 1 = some college (at least 3 semester hours completed, but less than Associate's) 2 = Associate's or less than Bachelor's 3 = Bachelor's 4 = Master's; Post-master's, but less than doctoral 5 = Doctoral degree or first Professional degree |
| BSEP | Soldier's completion of BSEP class | Nominal | 0 = no; 1 = yes |
| Degree Earned Using TA | Soldier's degree completion using TA | Nominal | 0 = no; 1 = yes |
| Average Number of Classes Taken with TA | Soldier's average number of classes completed using TA during FY 2016 - FY 2019 timeframe | Ordinal | 0 = lowest number of classes taken 33 = the highest number of classes taken |
| Drops/Withdrawals | Number of drops or withdrawals in FY 2016 – FY 2019 | Ordinal | 0 = lowest number of drops/withdrawals 51 = the highest number of drops/withdrawals |
| Successful Course Enrollments | Number of classes with a passing grade | Ordinal | 0 = lowest number of successful enrollments 33 = the highest number of successful enrollments |

| Variable | Variable Description | Measure | Values |
|----------|--|---------|--|
| Failures | Number of classes with the fail grade | Ordinal | 0 = lowest number of failed enrollments 13 = the highest number of failed enrollments |
| GT Score | General Technical (GT) score GT score of 110 is required for reclassification; eligibility for commissioning programs; pre-requisite for attendance in career development courses, such as NCOES and chances for promotion. | Ordinal | 0 = 109 or below 1 = 110 and above |

Note: Adapted from “Advanced and multivariate statistical methods: Practical application and interpretation” (6th ed.), by C. A. Mertler & R. A. Vannatta, 2017. New York, NY: Routledge.

**APPENDIX K: FACTORS AFFECTING SOLDIERS IN MEETING THEIR
EDUCATIONAL GOALS AND POTENTIAL IMPACT ON COMMITMENT OF
COMPLETING A DEGREE WHILE ON ACTIVE DUTY**

| Military | Factors | Potential Impact on Soldiers' Academic Goals and Commitment to Degree Completion |
|----------|---|---|
| Social | <ul style="list-style-type: none"> • Army education philosophy • PCS • Military operational tempo • Commander's educational philosophy • Military training | <ul style="list-style-type: none"> • Positive/Negative • Positive/Negative • Positive/Negative • Positive/Negative • Positive |
| | <p>Family</p> <ul style="list-style-type: none"> • Cultural/family values • Family responsibilities and demands • Role model <p>Society</p> <ul style="list-style-type: none"> • Advice from fellow soldier • Degree is not required to make good living • Focus on credentialing • Postsecondary education paradigm shift • Peer pressure • Social media overload | <ul style="list-style-type: none"> • Positive/Negative • Positive /Negative • Positive • Positive/Negative • Positive/Negative • Positive/Negative • Negative • Positive/Negative • Negative |

| Groups | Factors | Potential Impact on Soldiers' Academic Goals and Commitment to Degree Completion |
|-------------------------------|--|---|
| Personal | <p>Emotional</p> <ul style="list-style-type: none"> • Fear of failure • Lack of confidence • Previous negative Education experience • Learning disabilities • Procrastination <p>Commitment</p> <ul style="list-style-type: none"> • Academic unpreparedness • Lack of motivation • Study habits • Readiness to sacrifice personal time | <ul style="list-style-type: none"> • Negative • Negative • Negative • Negative • Negative • Negative • Positive |
| Academic Integration/ Support | <p>ACES</p> <ul style="list-style-type: none"> • ACES role as liaison • Advising practices • Availability of programs, services, and facilities • Garrison and states' support • GoArmyEd multiple EIs options <p>Soldier's School Selection</p> <ul style="list-style-type: none"> • Climate differences in military and CivEd • Credit transferability • Dissatisfaction with the academic environment • Non-traditional student challenges | <ul style="list-style-type: none"> • Positive • Positive/Negative • Positive/Negative • Positive/Negative • Positive/Negative • Negative • Positive/Negative • Negative • Negative |

| Group | Factors | Potential Impact on Soldiers' Academic Goals and Commitment to Degree Completion |
|-----------|---|--|
| Resources | <p>Funding</p> <ul style="list-style-type: none"> • Army's TA • No funds available to pay for books and fees, TA cost difference • GI Bill usage • Scholarships <p>Technology</p> <ul style="list-style-type: none"> • GoArmyEd hard to navigate • Internet availability downrange • Limited access to resources due to security | <ul style="list-style-type: none"> • Positive • Negative • Positive/Negative • Positive • Negative • Positive/Negative • Negative |

Note: The factors classification is based on the individual's perception regarding adult learning and participation with VoEd.

**APPENDIX L: APPLICATION OF CROSS’S MODEL TO FACTORS AFFECTING
SOLDIER VOLED PARTICIPATION**

| Cross’s Model (1981) Categories | Soldiers’ Barriers | Subcategory | Factors | Variables as Key Indicators |
|--|-----------------------|-------------|--|---|
| Situational | Social | Family | Cultural/family values Familial responsibilities and demands Role model Single parent responsibilities | Age, Age into the Army, Race/Ethnicity, Gender, Marital Status CivEd Code |
| Situational | Social | Society | Advice from fellow soldier Believe that the degree is not required to make good living Focus on credentialing vs. degree Postsecondary education paradigm shift Peer pressure Social media overload | Number of Years in Service, PEBD, Age into the Army, GT Score |
| Dispositional | Personal | Commitment | Academic unpreparedness Lack of motivation Readiness to sacrifice personal time Study habits | Age, Age into the Army, Gender, Marital Status Number of Years in Service, PEBD BSEP, CivEd Code, GT Score |

| Cross's Model (1981) Categories | Soldiers' Barriers | Subcategory | Factors | Variables as Key Indicators |
|---------------------------------|---------------------|--------------|--|---|
| Dispositional | Personal | Emotional | Fear of failure Lack of confidence Learning disabilities Previous negative experience Procrastination | Age into the Army, Race/ Ethnicity, Gender GT Score |
| Institutional | Military | Military | Army's education philosophy Commander's education philosophy Military operational tempo Military training PSC | Age into the Army, Number of Years in Service, PEBD, CMF / MOS Cumulative Total of Classes Taken with TA, BSEP, CivEd Code, GT Score |
| Institutional | Integration Support | ACES | ACES as liaison Advising practices Availability of programs, services, and facilities Garrison and state support GoArmyEd multiple EIs' selection | CMF/MOS Cumulative Total of Classes Taken with TA, BSEP, CivEd Code, GT Score |
| Institutional | Integration Support | Soldier's EI | Climate difference in military and civilian environment Dissatisfaction with the academic environment Military and civilian credit transferability Non-traditional student challenges | Number of Years in Service, PEBD, CMF/MOS Cumulative Total of Classes Taken with TA, CivEd Code |

| Cross's Model (1981) Categories | Soldiers' Barriers | Subcategory | Factors | Variables as Key Indicators |
|---------------------------------|--------------------|-------------|---|---|
| Institutional | Resources | Funding | Army's financial assistance Fees, TA Cost Differences, and Books GI Bill Scholarships | Cumulative Total of Classes Taken with TA, CivEd Code, GT Score |
| Institutional | Resources | Technology | GoArmyEd hard to navigate Internet availability downrange Limited resource access downrange due to security | Cumulative Total of Classes Taken with TA, BSEP |

Note: The application is based on the individual's perception regarding adult learning and participation with VolEd.